ENVIRONMENT AL PROTECTION AGENCY

40 CFR Part 60

[EPA-HQ-OAR-2017-0757; FRL-XXXX-XX-OAR]

RIN 2060-AT90

Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources Review

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: This action proposes reconsideration amendments to the new source performance standards (NSPS) at 40 Code of Federal Regulations (CFR) part 60, subpart 0000 (2012 NSPS 0000) and 0000a (2016 NSPS 0000a). These amendments, if finalized, would remove sources in the transmission and storage segment from the source category, rescind the NSPS (including both the volatile organic compounds (VOC) and methane requirements) applicable to those sources, and rescind the methane-specific requirements (the "methane requirements") of the NSPS applicable to sources in the production and processing segments. The U.S. Environmental Protection Agency (EPA) is also proposing, as an alternative, to rescind the methane requirements of the NSPS applicable to all oil and natural gas sources, without removing any sources from the source category. Furthermore, the EPA is taking comment on alternative interpretations of its statutory authority to regulate pollutants under section 111 (b) of the Clean Air Act (CAA), and associated record and policy questions.

DATES: Comments. Comments must be received on or before [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER). Under the Paperwork Reduction Act (PRA), comments on the information collection provisions are best assured of consideration if the Office of Management and Budget (0MB) receives a copy of your comments on or before [INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, identified by Docket ID No. EPA-HQ-OAR-2017-0757, at https://www.regulations.gov/, by any of the following methods:

• Federal e Rulemaking Portal: https:llwww. regulations.gov/ (our preferred method). Follow the online instructions for submitting comments.

• Email: a-and-r-docket@epa.gov. Include Docket ID No. EPA-HQ-OAR-2017-0757 in the subject line of the message.

• Fax: (202) 566-9744. Attention Docket ID No. EPA-HQ-OAR-2017-0757.

• Mail: U.S. Environmental Protection Agency, EPA Docket Center, Docket ID No. EPAHQ-OAR-2017-0757, Mail Code 28221 T, 1200 Pennsylvania Avenue, NW, Washington, DC 20460.

• Hand/Courier Delivery: EPA Docket Center, WJC West Building, Room 3334, 1301 Constitution Avenue, NW, Washington, DC 20004. The Docket Center's hours of operation are 8:30 a.m. - 4:30 p.m., Monday - Friday (except federal holidays).

Instructions: All submissions received must include the Docket ID No. for this rulemaking.

Comments received may be posted without change to https://www.regulations.gov/, including any personal information provided. For detailed instructions on sending comments and additional

information on the rulemaking process, see the SUPPLEMENT AL INFORMATION section of this document.

FOR FURTHER INFORMATION CONTACT: For questions about this proposed action, contact Ms. Amy Hambrick, Sector Policies and Programs Division (E143-05), Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone number: (919) 541-0964; fax number: (919) 541-0516; and email address: hambrick.amy@epa.gov. For information about the applicability of the NSPS to a particular entity, contact Ms. Marcia Mia, Office of Enforcement and Compliance Assurance, U.S. Environmental Protection Agency, WJC South Building (Mail Code 2227A), 1200 Pennsylvania Avenue, NW, Washington DC 20460; telephone number: (202) 564-7042; and email address: rnia.rnarcia@epa.gov.

SUPPLEMENTARY INFORMATION:

Public hearing. The EPA will hold a public hearing on the proposal. Details will be announced in a separate Federal Register document.

Docket. The EPA has established a docket for this rulemaking under Docket ID No. EPAHQ-OAR-2017-0757. All documents in the docket are listed in Regulations.gov. Although listed, some information is not publicly available, e.g. , Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy. Publicly available docket materials are available either electronically in Regulations.gov or in hard copy at the EPA Docket Center, Room 3334, EPA WJC West Building, 1301 Constitution Avenue, NW, Washington, DC. The Public Reading Room is open from 8:30 a.m.

to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the

Public Reading Room is (202) 566-1744, and the telephone number for the EPA Docket Center

is (202) 566-1742.

Instructions. Direct your comments to Docket ID No. EPA-HQ-OAR-2017-0757. The

EPA' s policy is that all comments received will be included in the public docket without change

and may be made available online at https://www.regulations.gov/, including any personal

information provided, unless the comment includes information claimed to be CBI or other

information whose disclosure is restricted by statute. Do not submit information that you

consider to be CBI or otherwise protected through https://www.regulations.gov/ or email. This

type of information should be submitted by mail as discussed below.

The EPA may publish any comment received to its public docket. Multimedia

submissions (audio, video, etc.) must be accompanied by a written comment. The written

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comment is considered the official comment and should include discussion of all points you wish

to make. The EPA will generally not consider comments or comment contents located outside of

the primary submission (i.e. , on the Web, cloud, or other file sharing system). For additional

submission methods, the full EPA public comment policy, information about CBI or multimedia

submissions, and general guidance on making effective comments, please visit

https :I/www.epa.gov/dockets/commenting-epa-dockets.

The https:llwww.regulations.gov/ website allows you to submit your comment

anonymously, which means the EPA will not know your identity or contact information unless

you provide it in the body of your comment. If you send an email comment directly to the EPA

without going through https:l!www.regulations.gov/, your email address will be automatically

captured and included as part of the comment that is placed in the public do·cket and made

available on the Internet. If you submit an electronic comment, the EPA recommends that you

include your name and other contact information in the body of your comment and with any

digital storage media you submit. If the EPA cannot read your comment due to technical

difficulties and cannot contact you for clarification, the EPA may not be able to consider your

comment. Electronic files should not include special characters or any form of encryption and be

free of any defects or viruses. For additional information about the EPA's public docket, visit the

EPA Docket Center homepage at https://www.epa.gov/dockets.

Submitting CBI. Do not submit information containing CBI to the EPA through

https://www.regulations.gov/ or email. Clearly mark the part or all of the information that you

claim to be CBI. For CBI information on any digital storage media that you mail to the EPA,

mark the outside of the digital storage media as CBI and then identify electronically within the

digital storage media the specific information that is claimed as CBI. In addition to one complete

version of the comments that includes information claimed as CBI, you must submit a copy of

the comments that does not contain the information claimed as CBI directly to the public docket

through the procedures outlined in Instructions above. If you submit any digital storage media

that does not contain CBI, mark the outside of the digital storage media clearly that it does not

contain CBI. Information not marked as CBI will be included in the public docket and the EPA's

electronic public docket without prior notice. Information marked as CBI will not be disclosed

except in accordance with procedures set forth in 40 CFR part 2. Send or deliver information

identified as CBI only to the following address: OAQPS Document Control Officer (C404-02),

OAQPS, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711 ,

Attention Docket ID No. EPA-HQ-OAR-2017-0757.

Preamble acronyms and abbreviations. We use multiple acronyms and terms in this

preamble. While this list may not be exhaustive, to ease the reading of this preamble and for

reference purposes, the EPA defines the following terms and acronyms here:

AEO

BLM

BSER

CAA

CAIT

CBI

CCAC

CFR

CH4

co

CO2

C02Eq.

CVS

EAV

EGU

EIA

EPA

ESRL

GAO

GHG

GHGI

GHGRP

HAP

H2S

ICR

IR

kt

MMT

NAAQS

NAICS

NEI

NEMS

NGL

NOAA

NODA

NOx

NSPS

NTTAA

OGI

0MB

Annual Energy Outlook

Bureau of Land Management

best system of emission reduction

Clean Air Act

Climate Analysis Indicators Tool

Confidential Business Information

Climate and Clean Air Coalition

Code of Federal Regulations

metliane

carbon monoxide

carbon dioxide

carbon dioxide equivalent

closed vent system

equivalent annualized value

Electricity Generating Units

Energy Information Administration

Environmental Protection Agency

Earth System Research Laboratory

Government Accountability Office

greenhouse gases

greenhouse gas inventory

Greenhouse Gas Reporting Program

hazardous air pollutant(s)

hydrogen sulfide

Information Collection Request

infrared

kilotons

Million Metric Tons

National Ambient Air Quality Standards

North American Industry Classification System

National Emissions Inventory

National Energy Modeling System

natural gas liquids

National Oceanic and Atmospheric Administration

Notice of Data Availability

nitrogen oxides

new source performance standards

National Technology Transfer and Advancement Act

optical gas imaging

Office of Management and Budget

PE

PHMSA

PM

PM2.s

PM,o

PRA

PV

REC

RFA

RIA

SC-CH4

SCF

SIP

S02

tpy

TSD

UMRA

UNFCCC

U.S.

voe

WRI

professional engineer

Pipeline and Hazardous Materials Safety Administration

particulate matter

PM with a diameter of 2.5 micrometers or less

PM with a diameter of 10 micrometers or less

Paperwork Reduction Act

present value

reduced emissions completion

Regulatory Flexibility Act

Regulatory Impact Analysis

social cost of methane

significant contribution finding

state implementation plan

sulfur dioxide

tons per year

technical support document

Unfunded Mandates Reform Act

United Nations Framework Convention on Climate Change

United States

volatile organic compounds

World Resources Institute

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I. Executive Summary

A. Purpose and Summary of the Regulatory Action

Since the inception of the CAA, with its aim to promote the "public health and welfare

and the productive capacity" of the nation's population, the EPA has focused on air emissions

from the oil and natural gas industry. 1

•2 For nearly 40 years, the EPA has issued regulations

under CAA section 111 to limit emissions from the oil and natural gas industry, while accounting

for costs and other factors as instructed by Congress in the statute. 3 In this action, the EPA is

recognizing its responsibilities under that section, performed in accordance with the statute and

with national policy objectives. As such, the EPA here is proposing to amend its 2012 and 2016

rules affecting the industry, titled, respectively, "Oil and Natural Gas Sector: New Source

Performance Standards and National Emission Standards for Hazardous Air Pollutants Reviews;

Final Rule" ("2012 NSPS 0000")4 and "Oil and Natural Gas Sector: Emission Standards for

New, Reconstructed, and Modified Sources; Final Rule" ("2016 NSPS OOOOa").5 Those rules established NSPS for VOC emissions from the oil and natural gas industry, and the 2016 rule also established NSPS for greenhouse gases (GHGs), in the form of limitations on methane, for that industry.6 The amendments that the EPA is proposing are intended to continue existing protections from emission sources within the regulated source category, while removing regulatory duplication.

As directed by the President in March 2017, the EPA has reviewed the 2012 NSPS 0000 and 2016 NSPS 0000a with attention to whether the rules "unduly burden the development of domestic energy resources beyond the degree necessary to protect the public

1 42 U.S.C. 7401(b)(1).

2 44 FR 49222 (August 21, 1979) (listing "Crude Oil and Natural Gas Production" under CAA section 111 as a source category subject to standards of performance).

3 50 FR 26122 (June 24, 1985) (promulgating NSPS that address certain VOC emissions); 50 FR 40158 (October 1, 1985) (promulgating NSPS that address certain sulfur dioxide (S02) emissions).

4 77 FR 49490 (August 16, 2012).

5 81 FR 35824 (June 3, 2016).

6 Docket ID No. EPA-HQ-OAR-2010-0505.

interest," and if so, appropriately "suspend, revise, or rescind" regulatory requirements. 7•8 From this review, the EPA is now proposing to determine that some of the requirements under those rules are inappropriate because they affect sources that are not appropriately identified as part of the regulated source category, and some of the requirements under the 2016 NSPS 0000a are unnecessary insofar as they impose redundant requirements. Accordingly, the EPA is acting to rescind those requirements while maintaining health and environmental protections from appropriately iden_tified emission sources within the regulated source category.9

Specifically, the EPA is co-proposing two potential actions: a primary proposal and an alternative proposal. The primary proposal contains two steps. In the first step, the EPA is proposing to revisit its 2012 and 2016 interpretations of, and its 2016 revision to, the regulated source category to cover sources in the transmission and storage segment, and to rescind the NSPS requirements applicable to those sources. Having reexamined the transmission and

storage

segment, the EPA has determined that the purported revision in 2016 of the pre-existing source

category (which the EPA now proposes to conclude was originally intended to include only the

production and processing segments) was not appropriate. Because the transmission and storage

segment constitutes a separate source category from the production and processing segments, the

EPA could have listed it for regulation under CAA section 111 (b) only by making a significant

contribution and endangerment finding as required by the statue, which the EPA never did.

7 Executive Order 13783, "Promoting Energy Independence and Economic Growth," section 1(c)

(March 28, 2017).

8 82 FR 16331 (April 4, 2017) (notice ofreview of 2016 NSPS 0000a pursuant to Executive

Order 13783, signed by the EPA Administrator).

9 We note that the EPA is addressing certain specific reconsideration issues -- fugitive emissions

requirements at well sites and compressor stations, well site pneumatic pump standards, and the

requirements for certification of closed vent systems (CVS) by a professional engineer (PE) -- in

a separate proposal. See Docket ID Item No. EPA-HQ-OAR-2010-0505-7730 and 82 FR 25730.

Accordingly, under the first step of the primary proposal, the EPA proposes to rescind the

standards applicable to sources in the transmission and storage segment of the oil and gas

industry.

As the second step, the EPA is proposing to rescind the methane requirements of the

NSPS applicable to sources in the production and processing segments. The EPA proposed to

conclude that those methane requirements are entirely redundant with the existing NSPS for

VOC and, thus, establish no additional health protections. Indeed, due to the identical emission

source control technologies for methane and VOC, the EPA, when establishing the 2016 NSPS

0000a, found no need for any changes to the existing NSPS requirements for VOC when that

rule explicitly examined regulation of methane emissions. Rescinding the applicability to

methane emissions of the 2016 NSPS 0000a requirements, while leaving the applicability to

VOC emissions in place, will not affect the amount of methane emission reductions that

those

requirements will achieve.

Under the alternative proposal, the EPA is proposing to rescind the methane requirements

of the NSPS applicable to all oil and natural gas sources in the source category as it is currently

constituted, without undoing the 2012 and 2016 interpretations or expansion of the source

category to include sources in the transmission and storage segment. The rationale for rescinding

the methane requirements under this alternative proposal is the same as noted immediately

above, that is, that they are entirely redundant with the existing NSPS for VOC.

Both the primary and alternative proposal rely on the EPA's previous interpretation of the

requirement in CAA section 11 l(b)(l)(A) under which the EPA needs to make a finding that a

source category "causes, or contributes significantly to, air pollution which may reasonably be

anticipated to endanger public health or welfare" when it lists the source category, but that

thereafter, when it regulates pollutants emitted from the source category, it needs only a rational

basis to do so. The EPA proposes to retain that interpretation of this statutory provision.

However, in section VI.A of this preamble, the EPA takes comment on an alternative

interpretation, under which the Agency is required to make the significant-contribution finding

each time that it regulates a pollutant from the source category. In section VI.B of this preamble,

the EPA takes comment on whether, under this alternative interpretation, it made a valid finding

in the 2016 NSPS 0000a that methane emissions from the Crude Oil and Natural Gas

Production source category met this statutory standard. In section VI.C of this preamble, the

EPA takes comment on its proposed identification of certain factors which would inform its

judgment, should it make a new determination whether methane emissions from the source

category meet this statutory standard.

The EPA solicits public comment on all aspects of this proposal.

B. Costs and Benefits

The EPA has projected the cost savings, emissions increases, and forgone benefits that

may result from rescinding requirements from sources in the transmission and storage segment

(i.e., the primary proposal). The projected cost savings and forgone benefits are

presented in the

regulatory impact analysis (RIA) supporting this proposal. The primary proposal action also

rescinds methane requirements from sources in the production and processing segments and

leaves the VOC regulations in place. As the methane control options are redundant with VOC

control options, there are no expected cost or emissions effects from removing the methane

requirements in the production and processing segments with respect to these sources. Similarly,

there are no expected cost or emissions impacts under the alternative proposed option of

rescinding the methane requirements for all affected sources for the same reason: methane

control options on all sources are redundant with VOC control options. The RIA estimates

impacts for the analysis years 2019 through 2025. All monetized impacts of these amendments

are presented in 2016 dollars. All sources in the transmission and storage segment that are

affected by the 2016 NSPS 0000a, starting at the promulgation of the 2016 NSPS 0000a, are

sources that are affected by this action.

II. General Information

A. Does this action apply to me?

Categories and entities potentially affected by this action include:

TABLE 1. INDUSTRIAL SOURCE CATEGORIES AFFECTED BY THIS ACTION

Category NAICS Code1 Examples of Regulated Entities

Industry .... 211120 Crude Petroleum Extraction.

211130 Natural Gas Extraction.

221210 Natural Gas Distribution.

486110 Pipeline Distribution of Crude Oil.

486210 Pipeline Transportation of Natural Gas.

Federal government Not affected.

State/local/tribal Not affected.

government

1 North American Industry Classification System (NAICS).

This table is not intended to be exhaustive, but rather provides a guide for readers

regarding entities likely to be regulated by this action. This table lists the types of entities that the

EPA is now aware could potentially be affected by this action. Other types of entities not listed

in the table could also be affected by this action. To determine whether your entity is affected by

this action, you should carefully examine the applicability criteria found in the final rule. If you

have questions regarding the applicability of this action to a particular entity, consult the person

listed in the FOR FURTHER INFORMATION CONTACT section, your air permitting

authority, or your EPA Regional representative listed in 40 CFR 60.4 (General Provisions).

B. What should I consider as I prepare my comments to the EPA?

This action proposes to revise certain aspects of the 2012 NSPS 0000 and 2016 NSPS

0000a rule. In this proposed action, we seek comment on only the specific proposals or

comment solicitations in this proposed action. We do not seek comment on and we are not

opening for reconsideration and review any other aspects of the NSPS in 40 CFR part 60,

subparts 0000 and 0000a and related rulemakings at this time.

C. How do I obtain a copy of this document and other related information?

In addition to being available in the docket, an electronic copy of the proposed action is

available on the Internet. Following signature by the Administrator, the EPA will post a copy of

this proposed action athttps://www.epa.gov/controlling-air-pollution-oil-and-natural-gasindustry.

Following publication in the Federal Register, the EPA will post the Federal Register

version of the proposal and key technical documents at this same website. A redline version of

the regulatory language that incorporates the proposed changes in this action is available in the

docket for this action (Docket ID No. EPA-HQ-OAR-2017-0757).

III. Background

A. Oil and Natural Gas Industry and Its Emissions

This section generally describes the structure of the oil and natural gas industry, the

production, processing, as well as transmission and storage segments, and types of sources in

each segment and the industry's emissions. This information is part of the basis of the regulatory

approach that the EPA proposes here, which more accurately reflects the industry's differing

segments and eliminates redundant and unnecessary regulatory burden, while maintaining

protection for human health and the environment.

1. Oil and Natural Gas Industry - Structure

For purposes of developing 40 CFR part 60, subparts 0000 and 0000a, the EPA

characterized the oil and natural gas industry operations as being generally composed of four socalled

segments: (1) extraction and production of crude oil and natural gas ("oil and natural gas

production"), (2) natural gas processing, (3) natural gas transmission and storage, and (4) natural

gas distribution.' o, 11 It should be noted that the EPA regulates oil refineries as a separate source

category; accordingly, for purposes of this proposed rulemaking, for crude oil, the EPA' s focus

is on operations from the well to the point of custody transfer at a petroleum refinery, while for

natural gas, the focus is on all operations from the well to the customer.

The oil and natural gas production segment include the wells and all related processes

used in the extraction, production, recovery, lifting, stabilization, and separation or treatment of

oil and/or natural gas (including condensate). There are two basic types of wells, both of which

are located on well "pads": oil wells and natural gas wells. Oil wells comprise two types, oil

wells that produce crude oil only and oil wells that produce both crude oil and natural gas

(commonly referred to as "associated" gas). Production components located on the well pad may

include, but are not limited to, wells and related casing heads; tubing heads; and "Christmas tree"

piping, pumps, compressors, heater treaters, separators, storage vessels, pneumatic devices, and

dehydrators. Production operations include well drilling, completion, and recompletion

10 The EPA previously described an overview of the sector in section 2.0 of the 2011

Background Technical Support Document to 40 CFR part 60, subpart 0000, located at Docket

ID Item No. EPA-HQ-OAR-2010-0505-0045, and section 2.0 of the 2016 Background Technical

Support Document to 40 CFR part 60, subpart 0000a, located at Docket ID Item No. EPA-HQOAR-

2010-0505-7631 .

11 While generally oil and natural gas production includes both onshore and offshore operations,

40 CFR part 60, subpart 0000a addresses onshore operations.

processes, including all the portable non-self-propelled apparatuses associated with those

operations. 12

Other sites that are part of the production segment include "centralized tank batteries,"

stand-alone sites where oil, condensate, produced water, and natural gas from several wells may

be separated, stored, or treated. The production segment also includes the low pressure, small

diameter, gathering pipelines and related components that collect and transport the oil, natural

gas, and other materials and wastes from the wells to the refineries or natural gas processing

plants.

Of these products, crude oil and natural gas undergo successive, separate processing.

Crude oil is separated from water and other impurities and transported to a refinery via truck,

railcar, or pipeline. As noted above, the EPA treats oil refineries as a separate source category,

accordingly, for present purposes, the oil component of the production segment ends at the point

of custody transfer at the refinery. 13

The separated, unprocessed natural gas is commonly referred to as field gas and is

composed of methane, natural gas liquids (NGL), and other impurities, such as water vapor,

hydrogen sulfide (H2S), carbon dioxide (CO2), helium, and nitrogen. Ethane, propane, butane,

isobutane, and pentane are all considered NGL and often are sold separately for a variety of

different uses. Natural gas with high methane content is referred to as "dry gas," while natural

gas with significant amounts of ethane, propane, or butane is referred to as "wet gas." Natural

12 The 2016 NSPS 0000a rule defines reduced emissions completion (REC) to be a well

completion following fracturing or refracturing where gas flowback that is otherwise vented is

captured, cleaned, and routed to the gas flow line or collection system, re-injected into the well

or another well, used as an on-site fuel source, or used for other useful purpose that a purchased

fuel or raw material would serve, with no direct release to the atmosphere.

13 See 40 CFR part 60, subparts J and Ja and 40 CFR part 63, subparts CC and UUU.

gas typically is sent to gas processing plants to separate NGLs for use as feedstock for

petrochemical plants, burned for space heating and cooking, or blended into vehicle fuel. The

composition of field gas varies across basins in the U.S. 14 For example, the Appalachian region

is predominately dry gas and northern mid-continent (North Dakota) region is primarily wet gas.

The natural gas processing segment consists of separating certain hydrocarbons (HC) and

fluids from the natural gas to produce "pipeline quality" dry natural gas. The degree and location

of processing is dependent on factors such as the type of natural gas (e.g., wet or dry gas), market

conditions, and company contract specifications. Typically, processing of natural gas begins in

the field and continues as the gas is moved from the field through gathering and boosting stations

to natural gas processing plants, where the complete processing of natural gas takes place.

Natural gas processing operations separate and recover NGL or other non-methane gases and

liquids from field gas through one or more of the following processes: oil and condensate

separation, water removal, separation ofNGL, sulfur and CO2 removal, fractionation ofNGL,

and other processes, such as the capture of CO2 separated from natural gas streams for delivery

outside the facility. In some "dry gas" areas, the field gas, with naturally higher methane content,

may go from the well site directly into the transmission and storage segment without processing

in a gas processing plant. However, there is still the need to remove liquids that naturally

condense as the gas moves through the pipeline. Also, depending on the economics ofNGLs as a

product, there may be some amount of separation or extraction that occurs in transmission and

storage using a "dew point skid" or what is commonly referred to as a "straddle plant" to meet

specifications for the receiving pipeline. The EPA solicits comment on how commonly this type

14 Memorandum to U.S. EPA from Eastern Research Group. "Natural Gas Composition."

November 13, 2018. Docket ID No. EPA-HQ-OAR-2017-0757.

of processing occurs in the transmission and storage segment and whether we should -- and how

we might -- differentiate a facility in which this type of processing occurs from a "natural gas

processing plant," as that term is currently defined in NSPS 0000a. For example, the rule

defines a "natural gas processing plant" to include a facility that extracts NGLs from field gas,

where field gas is feedstock gas entering the natural gas processing plant. 40 CFR 60.5430a. If

the field gas moves directly from the production segment into transmission and storage facilities,

without passing through a natural gas processing plant, it would continue to be considered "field

gas," and if extraction ofNGLs from such gas subsequently occurs in a transmission or

storage

facility, that facility would be considered a "natural gas processing plant."

Once natural gas processing is complete, which the EPA understands generally to occur

at natural gas processing plants, the resulting product is the pipeline quality natural gas that is

ready for end use. The pipeline quality natural gas, which is comprised of 95 to 98 percent

methane, 15 does not undergo any more phase changes after processing is complete; instead, this

final product leaves processing operations and is transmitted to storage and/or distribution to the

end user.

Pipelines in the natural gas transmission and storage segment can be interstate pipelines,

which carry natural gas across state boundaries or intrastate pipelines, which transport the gas

within a single state. Basic components of the two types of pipelines are the same, though

interstate pipelines may be of a larger diameter and operated at a higher pressure. To ensure that

the natural gas continues to flow through the pipeline, the natural gas must periodically be

compressed, by increasing its pressure. Compressor stations perform this function and are

15 https ://www.epa.gov/natural-gas-s tar-pro gram/ overview-oil-and-natural-gas-industry.

usually placed at 40- to 100-mile intervals along the pipeline. At a compressor station, the

natural gas enters the station, where it is compressed by reciprocating or centrifugal compressors.

Another part of the transmission and storage segment are aboveground and underground

natural gas storage facilities. Storage facilities hold natural gas for use during peak seasons. The

main difference between underground and aboveground storage sites is that storage takes place

in storage vessels constructed of non-earthen materials in aboveground storage. Underground

storage of natural gas typically occurs in depleted natural gas or oil reservoirs and salt dome

caverns. One purpose of this storage is for load balancing (equalizing the receipt and delivery of

natural gas). At an underground storage site, typically other processes occur, including

compression, dehydration, and flow measurement.

The distribution segment is the final step in delivering natural gas to customers. 16 The

natural gas enters the distribution segment from delivery points located on interstate and

intrastate transmission pipelines to business and household customers. The delivery point where

the natural gas leaves the transmission and storage segment and enters the distribution segment is

a local distribution company's custody transfer station, commonly referred to as the "citygate."

Natural gas distribution systems consist of thousands of miles of piping, including mains and

service pipelines to the customers. If the distribution network is large, compressor stations may

be necessary to maintain flow; however, these stations are typically smaller than transmission

compressor stations. Distribution systems include metering stations, which allow distribution

companies to monitor the natural gas as it flows through the system.

2. Oil & Natural Gas Industry - Emissions

16 The distribution segment is not regulated under 40 CFR part 60, subpart 0000a.

The oil and natural gas industry emit, in varying concentrations and amounts, a wide

range of pollutants, including VOC, S02, nitrogen oxides (NOx), H2S, carbon disulfide, and

carbonyl sulfide. The oil and natural gas industry also emit OHO, such as methane and CO2•

Emissions can occur in all segments of the natural gas industry. As natural gas moves through

the system, emissions primarily result from intentional venting through normal operations,

routine maintenance, unintentional fugiti ve emissions, and system upsets. Venting can occur

through equipment design or operational practices, such as the continuous bleed of gas from

pneumatic controllers (that control gas flows, levels, temperatures, and pressures in the

equipment) or venting from well completions during production. In addition to vented emissions,

emissions can occur from leaking equipment (also referred to as fugitive emissions) in all parts

of the infrastructure, including major production and processing equipment (e.g. , separators or

storage vessels) and individual components (e. g. , valves or connectors). Emissions from the

crude oil portion of the industry result primarily from field production operations, such as

venting of associated gas from oil wells, oil storage vessels, and production-related equipment

such as gas dehydrators, pig traps, and pneumatic devices.

Emissions of both methane and VOC occur through the same emission points and processes. The technologies available to capture and/or control both pollutants from these emission sources are the same, and in their function, those technologies do not select between VOC and methane emissions. The industry has profit incentives to capture and sell emissions of natural gas (and methane), and multiple states have programs in place to control assorted emissions from the industry.

The next section provides estimated emissions of methane, VOC, and S02 from oil and natural gas industry operation sources.

a. Methane emissions in the US. and from the oil and natural gas industry. Official U.S. estimates of national level GHG emissions and sinks are developed by the EPA for the U.S. GHG Inventory (GHGI) to comply with commitments under the United Nations Framework Convention on Climate Change. The U.S. GHGI, which includes recent trends, is organized by industrial sectors. The oil and natural gas production, and natural gas processing and transmission sectors emit 29 percent of U.S. anthropogenic methane. Table 2 below presents total U.S. anthropogenic methane emissions for the years 1990, 2008, and 2017.

TABLE 2. U.S. METHANE EMISSIONS BY SECTOR (MILLION METRIC TON CARBON DIOXIDE EQUIVALENT (MMT CO2 EQ.))

Sector	1990	2008	2017
Oil and Natural Gas Production, and Natural Gas Processing and Transmission and Storage	191	195	190
Oil and Natural Gas Production, and Natural Gas Processing	134	163	158
Oil and Natural Gas Transmission and Storage	57	32	32
Landfills	180	125	108
Enteric Fermentation	164	174	175
Coal Mining	96	76	56
Manure Management	37	58	62

Other Oil and Gas Sources 44 18 13

Wastewater Treatment 15 15 14

Other Methane Sources 17 57 52 47

Total Methane Emissions 785 712 665

Emissions from the Inventory of United States Greenhouse Gas Emissions and Sinks: 1990-2 017

(published April 11 , 2019), calculated using global warming potential (GWP) of 25. Note: To

may not sum due to rounding.

Table 3 below presents total methane emissions from natural gas production through

transmission and storage and petroleum production, for years 1990, 2008, and 2017, in MMT

CO2 Eq. (or million metric tonnes carbon dioxide equivalent) of methane.

tals

TABLE 3. U.S. METHANE EMISSIONS FROM NATURAL GAS AND PETROLEUM

SYSTEMS (MMT CO2 EQ.)

Sector

Oil and Natural Gas

Production and

Natural Gas

Processing and

Transmission

Total

Natural Gas

Production

Natural Gas

Process in

Natural Gas

Transmission and

Stora e

Petroleum

Production

1990

191

71

21

57

41

2008 2017

195 190

114 110

11 12

32 32

38 37

Emissions from the Inventory of United States Greenhouse Gas Emissions and Sinks: 1990-2

(published April 11 , 2019), calculated using GWP of 25. Note: Totals may not sum due to

rounding.

017

17 Other sources include rice cultivation, forest land, stationary combustion, abandoned oil an d

gas wells, abandoned coal mines, mobile combustion, composting, and several sources emitti ng

less than 1 MMT CO2 Eq. in 2017.

b. VOC and S0 2 emissions in the U S. and from the oil and natural gas industry . Officia1 U.S.

estimates of national level VOC and S02 emissions are developed by the EPA for the N

Emissions Inventory (NEI), for which states are required to submit information under 40

part 51 , subpart A. Data in the NEI may be organized by various data points, including s

NAICS code, and Source Classification Code. The oil and natural gas sources emit 5.7 an

percent of U.S. VOC and S02, respectively. Tables 4 and 5 below present total U.S. VO

S02 emissions by sector, respectively, for the year 2014, in kilotons (kt) (or thousand m

ational

CFR

ector,

d 1.8

Cand

etric

tons).

TABLE 4. U.S. voe EMISSIONS BY SECTOR (kT)

Sector 20 14

Bio enics - Ve etation and Soil 38 ,672

Oil and Natural Gas Production, and Natural Gas Processin and Transmission 3, 172

Fires - Wildfires 2,4 66

Fires - Prescribed Fires 1,9 80

Mobile - On-Road non-Diesel Li 1,9 65

Solvent - Consumer & Commercial Solvent Use 1,6 21

Mobile - Non-Road E ui ment- Gasoline 1,5 36

Other VOC Sources18 4,2 38

Total VOC Emissions 55 ,651

Emissions from the 2014 NEI, Version 2 (released February 2018). Note: Totals may no t sum

due to rounding.

TABLE S. U.S. S02 EMISSIONS BY SECTOR (kT)

Sector

Fuel Comb - Electric Generation - Coal

Fuel Comb - Industrial Boilers, Internal Combustion En ines - Coal

Mobile - Commercial Marine Vessels

Industrial Processes - Not Elsewhere Classified

Industrial Processes - Chemical Manufacturin

Oil and Natural Gas Production, and Natural Gas Processin and Transmission

Other S02 Sources 19

Total S02 Emissions

18 Other sources include remaining sources emitting less than 1,000 kt VOC in 2014.

19 Other sources include remaining sources emitting less than 100 kt S02 in 2014.

20 14

3, 155

33 5

17 5

13 7

13 3

84

78 7

4 ,805

Emissions from the 2014 NEI, Version 2 (released February 2018). Note: Totals may not sum

due to rounding.

Table 6 below presents total VOC and S02 emissions from oil and natural gas production through transmission and storage, for the year 2014, in kt (or thousand metric tons).

TABLE 6. U.S. voe AND S02 EMISSIONS FROM NATURAL GAS AND PETROLEUM SYSTEMS (kT)

Sector voe S02

Oil and Natural Gas Production and Natural Gas Processing and Transmission (Total)

3,172 84

Oil and Natural Gas Production 3,143 48

Natural Gas Processing 14 36

Natural Gas Transmission and Storage 16 1

Emissions from the 2014 NEI, Version 2 (published February 2018), in kt (or thousand metric

tons). Note: Totals may not sum due to rounding.

B. Statutory Background

CAA section 111 authorizes and directs the EPA to prescribe NSPS applicable to certain

new stationary sources (which are defined by the statue to include newly constructed sources)

and also existing sources that undergo "modification" within the meaning of CAA section

11 l(a)(4)).20 As the first step to regulation, the CAA initially directed the EPA to publish by

March 31 , 1971 , and "from time to time thereafter [to] revise," a list of categories of stationary

sources and to include on that list each category of stationary sources for which the

Administrator has made a "judgment" that the emission of air pollutants from sources within

such category "causes, or contributes significantly to, air pollution which may reasonably be

anticipated to endanger public health or welfare." 21 The EPA has listed and regulated more than

2° CAA section 11 l(b)(l)(A).

21 Id.

60 stationary source categories under CAA section 111 .22 The EPA listed the source category at

issue here, "Crude Oil and Natural Gas Production" in 1979.23

Once the EPA has listed a source category, the EPA proposes and then promulgates

"standards of performance" for new sources in the category, which includes sources that have yet

to be constructed and those existing sources that undergo "modification."24 In addition, the

EPA' s regulations provide that new sources also include an existing source that undertakes a

reconstruction.

Under CAA section 11 l(b), the EPA must promulgate a "standard of performance" that

new, modified, and reconstructed sources are to meet. CAA section 11 l(a)(l) defines a "standard

of performance" as "a standard for emissions of air pollutants which reflects the degree of

emission limitation achievable through the application of the best system of emission reduction

(BSER) which (taking into account [cost and other factors]) the Administrator determines has

been adequately demonstrated." This definition makes clear that the standard of performance

must be based on "the best system of emission reduction ... adequately demonstrated" (BSER).

The U.S. Court of Appeals for the District of Columbia Circuit (D.C. Circuit) has had occasion over the years to speak to the definition of "standard of performance" and its component terms.25 By its terms, the definition of "standard of performance" under CAA section 111 (a)(l) provides that the emission limits that the EPA promulgates must be "achievable" by

22 See generally, 40 CFR part 60, subparts D-MMMM.

23 44 FR 49222 (August 21 , 1979).

24 CAA section 111 (b)(1)(B).

25 See 80 FR 64537 (discussing legislative history); Portland Cement Ass 'n v. Ruckelshaus, 486 F.2d 375 (D.C. Cir. 1973); Essex Chemical Corp. v. Ruckelshaus, 486 F.2d 427, (D.C. Cir. 1973); Portland Cement Ass 'n v. EPA , 665 F.3d 177 (D.C. Cir. 2011). See also Delaware v. EPA, 785 F.3d 1 (D.C. Cir. 2015).

application of a "system of emission reduction" that the EPA determines to be the "best" that is "adequately demonstrated," "taking into account . .. cost .. . nonair quality health and environmental impact and energy requirements."

With respect to the cost factor, the D.C. Circuit has stated that the EPA may not adopt a standard the cost of which would be "unreasonable."26 The D.C. Circuit has indicated that the EPA has substantial discretion in its consideration ·of cost under CAA section 111 (a). Moreover, CAA section 11 l(a) does not provide specific direction regarding what metric or metrics to use in considering costs, again affording the EPA considerable discretion in choosing a means of cost consideration. 27

C. What is the regulatory history and litigation background regarding performance standards for the oil and natural gas industry?

1. 1979 Listing of Source Category

Subsequent to the enactment of the CAA of 1970, the EPA took action to develop standards of performance for new stationary sources as directed by Congress in CAA section 111. By 1977, the EPA had promulgated NSPS for a total of 27 source categories, while NSPS for an additional 25 source categories were then under development.28 However, in amending the

CAA that year, Congress expressed dissatisfaction that the EPA' s pace was too slow.

Accordingly, the 1977 CAA Amendments included a new subsection (f) in section 111 , which

26 Sierra Club v. Castle, 657 F.2d 298, 343 (D.C. Cir. 1981). See "Emission Guidelines for

Greenhouse Gas Emissions From Existing Electric Utility Generating Units; Revisions to

Emission Guideline Implementing Regulations; Revisions to New Source Review Program,"

Proposed Rule, 83 FR 44746, 44758 (August 31 , 2018) (discussing D.C. Circuit caselaw).

27 See, e.g. , Husqvarna AB v. EPA, 254 F.3d 195, 200 (D.C. Cir. 2001) (where CAA section 213

does not mandate a specific method of cost analysis, the EPA may make a reasoned choice as to

how to analyze costs).

28 See 44 FR 49222 (August 21 , 1979).

specified a schedule for the EPA to list additional source categories under CAA section

111 (b)(1)(A) and prioritize them for regulation under CAA section 111 (b)(1)(B).

In 1979, as required by CAA section 111 (f), the EPA published a list of source

categories, which included "Crude Oil and Natural Gas Production," for which the EPA would

promulgate standards of performance under CAA section 111 (b). See Priority List and Additions

to the List of Categories of Stationary Sources, 44 FR 49222 (August 21 , 1979) (" 1979 Priority

List"). That list included, in the order of priority for promulgating standards, source categories

that the EPA Administrator had determined, pursuant to CAA section 11 l(b)(l)(A), contribute

significantly to air pollution that may reasonably be anticipated to endanger public health or

welfare. See 44 FR 49223 (August 21 , 1979); see also 49 FR 2636-37 (January 20, 1984).

2. 1985 NSPS for VOC and S02 Emissions from Natural Gas Processing Units

On June 24, 1985 (50 FR 26122), the EPA promulgated NSPS for the source category

that addressed VOC emissions from equipment leaks at onshore natural gas processing plants (40

CFR part 60, subpart KKK). On October 1, 1985 (50 FR 40158), the EPA promulgated NSPS for

the source category to regulate S02 emissions from onshore natural gas processing plants (40

CFR part 60, subpart LLL).

3. 2012 NSPS 0000 Rule and Related NSPS Rules

a. Regulatory action. In 2012, pursuant to its duty under CAA section 11 l(b)(l)(B) to review

and, if appropriate, revise NSPS, the EPA published the final rule, "Standards of Performance for

Crude Oil and Natural Gas Production, Transmission and Distribution," 77 FR 49490 (August

16, 2012) (40 CFR part 60, subpart 0000) ("2012 NSPS 0000"). This rule updated the S02

standards for sweetening units and VOC standards for equipment leaks at onshore natural gas

processing plants. In addition, it established VOC standards for several oil and natural gas

related operations'emission sources not covered by 40 CFR part 60, subparts KKK and LLL,

including natural gas well completions, centrifugal and reciprocating compressors, natural gas

operated pneumatic controllers, and storage vessels. Using information available at the time, the

EPA also evaluated methane emissions and reductions during the 2012 NSPS 0000 rulemak:ing

as a potential co-benefit ofregulating VOC emissions.

In 2013, 2014, and 2015 the EPA amended the 2012 NSPS 0000 rule in order to

address implementation of the standards. "Oil and Natural Gas Sector: Reconsideration of

Certain Provisions of New Source Performance Standards," 78 FR 58416 (September 23, 2013)

(2013 NSPS 0000) (concerning storage vessel implementation); "Oil and Natural Gas Sector:

Reconsideration of Additional Provisions ofNew Source Performance Standards," 79 FR 79018

(December 31 , 2014) ("2014 NSPS 0000") (concerning well completion); "Oil and Natural

Gas Sector: Definitions of Low Pressure Gas Well and Storage Vessel," 80 FR 48262 (August

12, 2015) ("2015 NSPS 0000") (concerning low pressure gas wells and storage vessels).

The EPA received petitions for both judicial review and administrative reconsiderations

for the 2012, 2013, and 2014 NSPS 0000 rules. The EPA denied reconsideration for some

issues, see "Reconsideration of the Oil and Natural Gas Sector: New Source Performance

Standards; Final Action," 81 FR 52778 (August 10, 2016), and, as noted below, granted

reconsideration for other issues. All related litigation is currently stayed pending the

reconsideration process.

4. 2016 NSPS 0000a Rule and Related Amendments

a. Regulatory action. On June 3, 2016, the EPA published a final rule titled "Oil and Natural Gas

Sector: Emission Standards for New, Reconstructed, and Modified Sources; Final Rule," at 81

FR 35824 (40 CFR part 60, subpart 0000a) ("2016 NSPS OOOOa"). 29

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30 The 2016 NSPS 0000a rule established NSPS for sources of GHG and VOC emissions for certain equipment, processes, and operations across the oil and natural gas industry. The 2016 NSPS 0000a addresses the following emission sources:

• Sources that were unregulated under the 2012 NSPS 0000 (hydraulically fractured oil well completions, pneumatic pumps, and fugitive emissions from well sites and compressor stations);

• Sources that were regulated under the 2012 NSPS 0 000 for VOC emissions, but not for GHG emissions (hydraulically fractured gas well completions and equipment leaks at natural gas processing plants); and

• Certain equipment that is used across the source category, for which the 2012 NSPS 0000 regulates emissions ofVOC from only a subset (pneumatic controllers, centrifugal compressors, and reciprocating compressors), with the exception of compressors located at well sites.

On March 12, 2018, the EPA finalized amendments of certain aspects of the 2016 NSPS 0000a requirements for the collection of fugitive emission components at well sites and compressor stations, specifically (1) the requirement that components on a delay ofrepair must

29 While the June 3, 2016, rulemaking also included final amendments to 40 CFR part 60, subpart 0000, we are not proposing at this time to amend 40 CFR part 60, subpart 0000.

30 The 2016 NSPS 0000a rule resulted from a series of directives from then President Obama targeted at reducing GHG, including methane: the President's Climate Action Plan (June 2013); the President's Climate Action Plan: Strategy to Reduce Methane Emissions ("Methane Strategy") (March 2014); and the President's directive to address, and if appropriate, propose and set standards for methane and ozone-forming emissions from new and modified sources in the sector (January 2015).

conduct repairs during unscheduled or emergency vent blowdowns, and (2) the monitoring survey requirements for well sites located on the Alaska North Slope.

For further information on the 2016 NSPS 0000a rule, see 81 FR 35824 (June 3, 2016) and for further information on the 2018 NSPS 0000a amendments, see 83 FR 10628 (March 12, 2018). The associated public docket for both actions is Docket ID No. EPA-HQ-OAR-2010-0505.

b. Petitions to reconsider. Following promulgation of the 2016 NSPS 0000a rule, the Administrator received five petitions for reconsideration of several provisions. Copies of the petitions are provided in Docket ID No. EPA-HQ-OAR-2010-0505.31 As noted below, the EPA

has granted reconsideration of several issues in the 2016 NSPS 0000a rule, proposed revisions

to the final rule based on the reconsideration and addressed broad implementation issues that

stakeholders had brought to the EPA' s attention.

c. Litigation. Several states and industry associations challenged the 2016 NSPS 0000a rule in

the D.C. Circuit, alleging, among other things, that the EPA acted arbitrarily and capriciously

and in excess of statutory authority. See, e. g. , West Virginia v. EPA, 16-1264, State Petitioners'

Non binding Statement of the Issues to be Raised. These cases were consolidated. In addition, on

January 4, 2017, the challenges to the 2016 NSPS 0000a rule were consolidated with the

challenges to the 2012 NSPS 0000 rule (as amended by the 2013 NSPS 0000 and 2014

NSPS 0000 rules), under American Petroleum Institute v. EPA, case No. 13-1108 (D.C. Cir.).

ECF Dkt # 1654072. On May 18, 2017, the D.C. Circuit issued an order granting a motion by the

EPA to hold in abeyance the consolidated litigation over the 2012 NSPS 0000 rule (as

31 See Docket ID Item Nos.: EPA-HQ-OAR-2010-0505-7682, EPA-HQ-OAR-2010-0505-7683,

EPA-HQ-OAR-2010-0505-7684, EPA-HQ-OAR-2010-0505-7685, EPA-HQ-OAR-2010-0505-

7686.

amended by the 2013 NSPS 0000 and 2014 NSPS 0000 rules) and the 2016 NSPS 0000a

rule, and requiring the EPA to file status reports every 60 days informing the Court and parties

regarding what action it has or will be taking regarding those rules. Id. , ECF Dkt. #1675813.

D. Other Notable Events

On March 28, 2017, newly elected President Donald Trump issued Executive Order

13 783 titled "Promoting Energy Independence and Economic Growth" (hereinafter "Executive

Order"). The purpose of the Executive Order is to facilitate the development of domestic energy

resources - including oil and gas - and to reduce unnecessary regulatory burdens associated with

the development of those resources. Specifically, the Executive Order establishes the policy of

the U.S. that executive departments and agencies "immediately review existing regulations that

potentially burden the development or use of domestically produced energy resources and

appropriately suspend, revise, or rescind those that unduly burden the development of domestic

energy resources beyond the degree necessary to protect the public interest or otherwise comply

with the law." Id. , Section 1(c). The Executive Order specifically instructs the EPA, among other

things, to "review" the 2016 NSPS 0000a rule as well as "any rules and guidance issued

pursuant to it, for consistency with th[is] policy .... " Id., Section 7. The Executive Order further

provides that "if appropriate, [the Agency] shall, as soon as practicable, suspend, revise, or

rescind the guidance, or publish for notice and comment proposed rules suspending, revising, or

rescinding those rules." Id.

In accordance with the Executive Order, also on March 28, 2017, the EPA Administrator

signed a Federal Register document announcing that the Agency is "reviewing the 2016 Oil and

Gas New Source Performance Standards (Rule), 81 FR 35824 (June 3, 2016), and, if appropriate,

will initiate proceedings to suspend, revise, or rescind it." The EPA further explained that: "If the

EPA' s review concludes that suspension, revision, or rescission of this Rule may be appropriate,

the EPA's review will be followed by a rulemaking process that will be transparent, follow

proper administrative procedures, include appropriate engagement with the public, employ sound

science, and be firmly grounded in the law." Id. , page 3. This notice was published in 82 FR

16331 (April 4, 2017).

On April 18, 2017, the EPA issued a letter granting reconsideration of the fugitive

emissions requirements at well sites and compressor stations. On June 5, 2017, the EPA issued a

notice granting reconsideration of additional issues, specifically the well site pneumatic pumps

standards and the requirements for certification by a PE. See "Oil and Natural Gas Sector:

Emission Standards for New, Reconstructed, and Modified Sources; Grant of Reconsideration

and Partial Stay," 82 FR 25730 (June 5, 2017).

In addition, in the same June 5, 2017, document of action in which it granted

reconsideration of additional issues, the EPA also issued, under CAA section 307(d)(7)(B), a 90-

day partial stay of the 2016 NSPS 0000a rule, pending the reconsiderations. Specifically, the

EPA stayed the provisions for fugitive emissions requirements, well site pneumatic pump

standards, and certification of CVS by a PE (40 CFR sections 60.5393a(b) through (c), 60.5397a,

60.5410a(e)(2) through (5) and G) , 60.541 la(d), 60.5415a(h), 60.5420a(b)(7), (8), and (12), and

(c)(15) through (17)). 82 FR 25730. Environmental groups challenged this stay, and on July 3,

2017, the D.C. Circuit vacated the stay on grounds that it did not meet the CAA section

307(d)(7)(B) criteria. See Clean Air Council v. EPA, 862 F.3d 1 (D.C. Cir. 2017).

On June 16, 2017, the EPA published a proposed stay of the same three requirements of

the 2016 NSPS 0000a rule for 2 years. "Oil and Natural Gas Sector: Emission Standards for

New, Reconstructed, and Modified Sources: Stay of Certain Requirements," 82 FR 27645 (June

16, 2017).

On November 8, 2017, the EPA issued a Notice of Data Availability (NODA) for the

proposed 2-year stay of the 2016 NSPS 0000a rule. In this NODA, the EPA provided, among

other things, additional information on several topics raised by stakeholders and solicited

comment on the information presented, including the legal authority to issue a stay and the

technological, resource, and economic challenges with implementing the fugitive emissions

requirements, well site pneumatic pump standards, and the requirements for certification of CVS

by a PE. "Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and

Modified Sources: Stay of Certain Requirements," 82 FR 51788 (November 8, 2017). The EPA

also solicited comment on other avenues to address these issues other than issuing a stay.

As previously discussed, on March 12, 2018, the EPA finalized amendments of certain

aspects of the requirements for the collection of fugitive emission components at well sites and

compressor stations, specifically (1) the requirement that components on a delay of repair must

conduct repairs during unscheduled or emergency vent blowdowns and (2) the monitoring survey

requirements for well sites located on the Alaska North Slope. 83 FR 10628. These narrow

amendments to the 2016 NSPS 0000a rule were in response to comments the EPA received on

the proposed stays and NODA and address significant and immediate compliance concerns.

On October 15, 2018, the EPA granted reconsideration of additional issues in the 2016

NSPS 0000a rule, proposed revisions to that rule based on the reconsideration, and addressed

broad implementation issues that stakeholders had brought to the EPA's attention. 83 FR 52056.

E. Related State and Federal Regulatory Actions

Several states and federal agencies currently regulate the oil and natural gas

industry. The

scope of state requirements ranges from general reporting requirements to quantitative emissions

limits and restrictions on venting and flaring. For example, Colorado requires that dehydrators,

liquids unloading operations, and pneumatic controllers achieve specific emission reductions, in

addition to regular monitoring of storage vessels and fugitive emissions. In Texas, well site

requirements vary based on specific site-wide VOC emissions, but standard requirements exist

for storage vessels, pneumatic controllers, and fugitive emissions. North Dakota has restrictions

on venting and flaring. Ohio has general permit programs for well sites and compressor stations;

the state also regulates dehydrators, engines, flares, fugitive emissions, and storage vessels at

both well sites and compressor stations, in addition to requirements for compressors, truck

loading, and pigging operations. Pennsylvania has a general permit program for compressor

statiqns and a permit exemption program for well sites. The compressor station permit includes

requirements for engines, compressors, storage vessels, fugitive emissions, and dehydrators. The

permit exemption program includes requirements for well completions, engines, fugitive

emissions, storage vessels, and flares. The EPA describes state fugitive emissions program

requirements in the memorandum titled "Equivalency of State Fugitive Emissions Programs for

Well Sites and Compressor Stations to Proposed Standards at 40 CFR Part 60, Subpart OOOOa,"

located at Docket ID No. EPA-HQ-OAR-2017-0483. Additional information can be found in a

memorandum32 written by the Bureau of Land Management (BLM) in support of the "Waste

Prevention, Production Subject to Royalties, and Resource Conservation; Rescission or Revision

of Certain Requirements," see 83 FR 7924.

32 See Docket ID Item No. BLM-2018-0001-0004.

In addition to states, certain federal agencies regulate the oil and natural gas industry. For

example, on November 18, 2016, the BLM promulgated new regulations to reduce waste of

natural gas from venting, flaring, and leaks during oil and natural gas production on onshore

federal and Indian (other than Osage Tribe) leases. 33 On September 28, 2018, the BLM finalized

amendments to their 2016 rule in order to reduce compliance burden and maintain

consistency

with BLM's existing statutory authorities.34 The BLM's revised 2018 rule discourages excessive

venting and flaring by placing volume and time limits on royalty-free venting and flaring during

production testing, emergencies, and downhole well maintenance and liquids unloading.

Additionally, BLM's rule incentivizes the beneficial use of gas by making gas used for

operations and production purposes royalty free. More detailed information can be found at

BLM' s website: https://www. blm.gov/programs/energy-and-minerals/oil-and-gas/operationsand-

production/melhane-and-waste-prevention-rule.

The Pipeline and Hazardous Materials Safety Administration (PHMSA) is responsible for

regulating and ensuring the safe and secure movement of materials to industry and consumers by

all modes of transportation, including pipelines. While PHMSA's regulations are focused on

safety, there is likely a corresponding environmental co-benefit from their rules. For example,

the PHMSA's Office of Pipeline Safety ensures safety in the design, construction, operation,

maintenance, and incident response of the U.S.' approximately 2.6 million miles of natural gas

and hazardous liquid transportation pipelines. When pipelines are maintained, the likelihood of

33 81 FR 83008 (November 18, 2016).

34 83 FR 49184.

environmental releases like leaks are reduced.35 More detailed information can be found at the

PHMSA' s website: https://www.phmsa.dot.gov!

IV. Summary and Rationale of Proposed Actions

As directed by the President, the EPA has reviewed the 2012 NSPS 0000 and 2016

NSPS 0000a with attention to whether the rules "unduly burden the development of domestic

energy resources beyond the degree necessary to protect the public interest" and, if so, whether it

is appropriate to "suspend, revise, or rescind" regulatory requirements.36• 37 This proposal follows

that review, and the EPA is proposing revisions to those requirements while maintaining health

and environmental protections for emission sources within the regulated source category.38

Specifically, the EPA is proposing to revise the source category to remove the

transmission and storage segment entirely and rescind the NSPS requirements applicable to

sources within the transmission and storage segment. This proposed action is based on the EPA's

proposed determination that its 2012 and 2016 rulemakings that interpreted or expanded the

source category to includes sources in the transmission and storage segment were improper in

that regard. Further, the EPA is proposing to rescind the methane requirements of the NSPS

applicable to sources within the production and processing segments because they are entirely

35 See Final Report on Leak Detection Study to PHMSA. December 10, 2012.

https://www.phmsa.dot.gov/sites/phmsa.dot.gov/.filesldocs/technicalresources/

pipeline/J 669 I /leak-detection-study.pdf

36 Executive Order 13783, "Promoting Energy Independence and Economic Growth," section

1 (c) (March 28, 2017).

37 82 FR 16331 (April 4, 2017) (Notice of review of2016 NSPS 0000a pursuant to Executive

Order 13783, signed by the EPA Administrator).

38 We note that the EPA is addressing certain specific reconsideration issues -- fugitive emissions

requirements at well sites and compressor stations, well site pneumatic pump standards, and the

requirements for certification of CVS by a PE -- in a separate proposal. See Docket ID Item No.

EPA-HQ-OAR-2010-0505-7730 and 82 FR 25730.

redundant of the existing NSPS for VOC. 39 Those requirements, thus, provide no additional

health protections and are unnecessary. Indeed, due to the identical emissions profiles and source

control technologies for methane and VOC, the EPA, when establishing the 2016 NSPS 0000a

to regulate methane, found no need for any changes to the existing NSPS requirements for VOC.

Rescinding the requirements of the 2016 NSPS 0000a applicable to methane emissions, while

leaving in place the requirements applicable to VOC emissions, will not affect the amount of

methane reductions that are achjeved in the production and processing segments, but it will

provide for greater clarity by simplifying the rule. Rescission of the requirements applicable to

methane emissions will also obviate the need for the development of emission guidelines under

CAA section 111 (d) and 40 CFR part 60, subpart B to address methane emissions from existing

sources within the crude oil and natural gas production industry.

As an alternative to trus first set of proposed actions, the EPA is proposing to rescind the

methane requirements of the 2016 NSPS 0000a applicable to all oil and natural gas sources

without removing any sources from the source category.

A. Revision of the Source Category to Remove Transmission and Storage Segment

Under CAA section 111 (b)(1)(A), the EPA must "publish . .. a list of categories of

stationary sources, emissions from which, in the judgment of the Administrator, cause[], or

contribute[] significantly to, air pollution which may reasonably be anticipated to endanger

public health or welfare." Further, CAA section 11 l(b)(l)(A) directs that "from time to time

thereafter" the EPA "shall revise" this "list" of categories of stationary sources. Following the

"inclusion of a category of stationary sources in a list," the EPA then proposes and promulgates

39 Section VI of this preamble takes comment on alternative questions of statutory interpretation

and associated potential record determinations which, if the EPA were to adopt them, might

provide an additional or alternative basis for both the primary and the alternative proposal.

"standards of performance for new sources within such category." CAA section 11 l(b)(l)(A).

Thereafter, the EPA "shall . .. review and, if appropriate, revise such standards." CAA section

11 l(a)(l)(B).

CAA section 111 (b)(1)(A) does not include any specific criteria for determining the

reasonable scope of a given "category" of "stationary sources" beyond the requirement that the

Administrator make a finding that, in his or her "judgment," emissions from the "category of

sources ... cause[], or contribute[]significantly to, air pollution which may reasonably be

anticipated to endanger public health or welfare." Accordingly, the EPA is afforded some

measure of discretion in determining at the outset the scope of a source category.

In 1978, the EPA published "Priorities for New Source Performance Standards Under the

Clean Air Act Amendments of 1977."40 The purpose of this document was to implement the

requirements of CAA section 111 (f) to develop and apply a methodology for identifying,

establishing, and prioritizing the source categories that should be considered first for in-depth

analysis prior to NSPS promulgation under CAA section 111. For purposes of the 1978 analysis,

the EPA aggregated emissions from "oil and gas production fields" and "natural gas processing"

as part of the "Crude Oil and Natural Gas Production Plant" source category. The EPA identified

this aggregated source category as a source of HC and S02 emissions. When the EPA finalized

the priority list in 1979, it slightly revised the name of the source category as "Crude Oil and

Natural Gas Production." 49 FR 49222 (August 21, 1979).

In 1985, the EPA promulgated two rulemakings establishing NSPS for the Crude Oil and

Natural Gas Production source category. These were 40 CFR part 60, subpart KKK- Standards

40 Priorities for New Source Performance Standards Under the Clean Air Act Amendments of

1977. April 1978. EPA-450/3-78-019.

of Performance for Equipment Leaks of VOC from Onshore Natural Gas Processing Plants (50

FR 26124, June 23, 1985); and subpart LLL - Standards of Performance for S02 Emissions from

Onshore Natural Gas Processing (50 FR 40160, October 1, 1985). When it first proposed 40 CFR

part 60, subpart KKK, the EPA noted that the "category 'Crude Oil and Natural Gas Production'

ranks 29th on the list of 59 source categories," and that the "crude oil and natural gas production

industry encompasses the operations of exploring for crude oil and natural gas products,

removing them from beneath the earth's surface, and processing these products for distribution to

petroleum refineries and gas pipelines. "41 The EPA repeated that description of the identified

source category when it first proposed 40 CFR part 60, subpart LLL, explaining that the "crude

oil and natural gas production industry encompasses not only processing of the natural gas

(associated or not associated with crude oil) but operations of exploration, drilling, and

subsequent removal of the gas from porous geologic formations beneath the earth's surface."42

In 2012, the EPA reviewed the VOC and S02 standards and at the same time established

new requirements for stationary sources of VOC emissions that had not been regulated in the

1985 rulemaking (e. g. , well completions, pneumatic controllers, storage vessels, and

compressors). 40 CFR part 60, subpart 0000 - Standards of Performance for Crude Oil and

Natural Gas Production, Transmission and Distribution for which Construction, Modification or

Reconstruction Commenced After August 23, 2011 , and on or Before September 18, 2015, (77

FR 49542, August 16, 2012). In the preamble of the 2011 proposal for that 2012 NSPS 0000

final rule, the EPA interpreted the 1979 listing as indicating that "the currently listed Oil and

Natural Gas source category covers all operations in this industry (i. e., production, processing,

41 49 FR 2637 (January 20, 1984).

42 49 FR 2658 (January 20, 1984).

transmission, storage and distribution)." 76 FR 52738, 52745 (August 23 , 2011). Further, the

EPA stated that " [t]o the extent there are oil and gas operations not covered by the currently

listed Oil and Natural Gas source category .... , we hereby modify the category list to include all

operations in the oil and natural gas sector." Id. at 52745. The stated basis for that proposed

decision was that " [s]ection 11 l(b) of the CAA gives the EPA the broad authority and discretion

to list and establish NSPS for a category that, in the Administrator's judgment, causes or

contributes significantly to air pollution which may reasonably be anticipated to endanger public

health or welfare." Id. at 52745. No additional discussion of this listing position was provided in

the 2011 proposal.

In the 2012 final rulemaking, the EPA promulgated NSPS for emission sources in the

production, processing, and transmission and storage segments, 77 FR 49490, 49492 (August 16,

2012), and stated that " [t]he listed Crude Oil and Natural Gas Production source category covers,

at a minimum, those operations for which we are establishing standards in this final rule." Id. at

49496. In responding to comments, the EPA took the position that it was not actually revising the

source category to include emission sources in the transmission and storage segment, but rather,

was interpreting the 1979 listing to be "broad," and interpreting the 1985 rulemaking as

"view[ing] this source category listing very broadly," Id. at 49514, so that, in the EPA's view,

the source category was already sufficiently broad to include that segment.43

43 In the 2012 NSPS 0000 rulemaking, the EPA referred to the distribution segment of the oil

and natural gas industry, which entails transporting natural gas to the end user, 76 FR 52738,

52745 (August 23, 2011) (proposed rule); 49514, 77 FR 49493 (Table 2) (August 16, 2012) (final rule). However, in the 2016 NSPS 0000a rule, the EPA clarified that the scope of the Oil and Natural Gas Production and Processing source category includes the transmission and storage segment, but not the distribution segment. In addition, the, EPA has never treated any sources in the distribution segment as subject to the requirements of NSPS 0000 or 0000a.

In 2016, the EPA promulgated new NSPS (40 CFR part 60, subpart 0000a) for the Crude Oil and Natural Gas Production source category (81 FR 35824, June 3, 2016). As the EPA did in the 2012 NSPS 0000 rule, the EPA took the position that the 1979 listing was broad enough to encompass the transmission and storage segment and that the 1985 rulemakings confirmed that broad listing. The EPA stated that the inclusion of the transmission and storage segment into the original 1979 source category was warranted because equipment and operations at production, processing, transmission and storage facilities are a sequence of functions that are interrelated and necessary for getting the recovered gas ready for distribution. Nevertheless, the EPA recognized that the scope of the prior listing may have had some ambiguity. Accordingly, "as an alternative," the EPA finalized a revision of the category to broaden it, so that "[a]s revised, the listed oil and natural gas source category includes oil and natural gas production, processing, transmission, and storage." (81 FR 35840).

The EPA has reviewed the original 1979 listing of the Crude Oil and Natural Gas Production source category and the associated background materials and now proposes to find that its 2012 and 2016 interpretation of the 1979 listing -- i.e. , that the 1979 listing included natural gas transmission and storage -- was erroneous. The preamble accompanying the 1979 listing, which identified the source category as "Crude Oil and Natural Gas Production," gave no indication that a source category ostensibly focused on "production" also included those sources associated with post-production operations such as transmission and storage. As explained in greater detail below, to the extent there was ambiguity, the issue was resolved in 1984, when the EPA, in proposing the first standards of performance for sources within the Crude Oil and

Natural Gas Production source category (i.e., 40 CFR part 60, subpart KKK), described the

category as "encompass[ing] the operations of exploring for crude oil and natural gas products,

removing them from beneath the earth's surface and processing these products for distribution to

petroleum refineries and gas pipelines."44 This description, by its express terms, establishes that

sources in the transmission and storage segment were not included in the Crude Oil and Natural

Gas Production source category as listed in 1979. Therefore, the EPA is proposing to disavow its

erroneous interpretation from 2012 and 2016, and instead propose that the source category does

not include natural gas transmission and storage. Following are details of our rationale for this

action.

As noted above, the 1978 "Priorities for New Source Performance Standards Under the

Clean Air Act Amendments of 1977" analysis aggregated the emissions from "oil and gas

production fields" and "natural gas processing" as part of what was then labeled as the "Crude

Oil and Natural Gas Production Plants" source category. This aggregated source category was

identified as a source of HC and S02 emissions. The EPA listed the "Stationary Pipeline

Compressor Engines" source category separately, which included emissions specific to engines

used at compressor stations (i.e., NOx, S02 and carbon monoxide (CO)). EPA-450/3-78-019

(April 1978).

The revised priority list that the EPA promulgated in 1979 and its associated support

document, "Revised Prioritized List of Source Categories for Promulgation,"45 included the

aggregated "Crude Oil and Natural Gas Production Plants" source category. The support

document also included a separate study of "stationary pipeline compressor engines" emissions.

The record makes clear that, at the time, the EPA was distinguishing between oil and natural gas

production plants and natural gas processing on the one hand, and stationary pipeline compressor

44 49 FR 2637; see also 49 FR 2658.

45 U.S. EPA. "Revised Prioritized List of Source Categories for NSPS Promulgation." March

1979. EPA-450/3-79-023.

engines on the other, and that it intended to promulgate separate standards for HC and S02

emissions from those two source categories. EPA-450/3-79-023 (March 1979). The record for

the 1979 action indicates that, at the time, the EPA clearly considered the "Crude Oil and Natural

Gas Production'' source category to include but be limited to production and processing

operations. In addition, the record makes clear that the EPA also considered stationary pipeline

compressor engines to be part of a separate source category. 46 Other parts of the record indicate

that the EPA intended to promulgate standards separately for HC and S02 emissions from those

two sets of sources. EPA-450/3-79-023 (March 1979). In contrast, the record does not

specifically address the transmission and storage segment.

As has already been noted, in 1984-85, the EPA developed the first two NSPS for the

source category (40 CFR part 60, subparts KKK and LLL) by establishing standards to address

VOC and S02 emissions for sources in the production and processing segments alone, and in so

doing, indicated that it considered the scope of the source category to be limited to those

segments. Specifically, the EPA promulgated standards at 40 CFR part 60, subpart KKK for

onshore natural gas processing plants in 1985, which were the first standards promulgated for the

source category. In the 1984 proposal preamble, the EPA clarified the scope of the source

category as follows:

The crude oil and natural gas production industry encompasses the operations of

exploring for crude oil and natural gas products, drilling for these products,

removing them from beneath the earth's surface, and processing these products

from oil and gas fields for distribution to petroleum refineries and gas pipelines.

46 The EPA promulgated NSPS for stationary spark ignition internal compressor engines under

the "Standards of Performance for Stationary Spark Ignition Internal Combustion Engines and

National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal

Combustion Engines." (40 CFR part 60, subpart JJJJ; 73 FR 3568, 3569, January 18, 2008).

These standards applied to engines located at compressor stations at natural gas transmission and

storage facilities, as well as engines located in other industry sectors.

49 FR 2636.

Thus, in the sentence just quoted, the EPA explicitly defined the source category as

encompassing the natural gas operations up to the point of distribution to gas pipelines, that is,

up to the storage and transmission segment, and in that manner, indicated that this segment was

not included in the source category. (Similarly, in the same sentence, the EPA defined the scope

of the source category as encompassing oil operations up to the point of distribution to petroleum

refineries, which are a separate source category.) In this manner, the EPA indicated that the

Crude Oil and Natural Gas Production source category includes operations from well sites

(exploration, drilling, and removal) and natural gas processing plants (processing). While

gathering and boosting compressor stations were not specified, it is reasonable to conclude that

they are also included because they are located between two covered sites, the well site and the

processing plant. However, to reiterate, subsequent operations, such as transmission, storage, and

distribution were not included. Thus, the EPA is now proposing to find that its earlier view that

the original listing in 1979 of the Crude Oil and Natural Gas Production source category already

included the transmission and storage segment was in error, as the record of the 1979 listing

action, and subsequent rulemaking actions by the EPA, described above, make clear.

As noted above, we had stated in the 2016 NSPS 0000a rule our view that the "1979

listing of [the Crude Oil and Natural Gas Production] source category provides sufficient

authority for this action," but we then added that, "to the exterit that there is ambiguity in the

prior listing, the EPA hereby finalizes, as an alternative, its proposed revision of the category

listing to broadly include the oil and natural gas industry."47 "As revised," we went on to say,

47 81 FR 35833.

"the listed oil and natural gas category includes oil and natural gas production, processing,

transmission, and storage. "48 As discussed next, the EPA is further proposing to find that this

"alternative" approach - i. e., "revising" the previously-established Crude Oil and Natural Gas

Production source category to include sources within the storage and transmission segment - was

m error.

While CAA section 11 l(b)(l)(A) and (B), respectively direct the EPA to "revise," where

warranted, both the "list of source categories" and the "standards of performance" that the EPA

has promulgated, nothing in CAA section 111 expressly authorizes or directs the EPA to "revise"

a "source category," by altering its scope, once the EPA has listed that source category.

However, the EPA has inherent authority to reconsider, repeal, or revise past decisions to the

extent permitted by law so long as the Agency provides a reasoned explanation. See Motor

Vehicle Manufacturers Association of the United States v. State Farm Mutual Automobile

Insurance Co., 463 US 29, 56-57 (1983) ("an agency changing its course must supply a reasoned

analysis," quoting Greater Boston Television Corp. v. FCC, 143 F.2d 841 , 842 (D.C. Cir.)). The

CAA complements the EP A's inherent authority to reconsider prior rulemakings by providing the

Agency with broad authority to prescribe regulations as necessary. See 42 U.S.C. 7601(a). See

Clean Air Council v. Pruitt, 862 F.3d 1, 8-9 (D.C. Cir. 2017) ("[a]gencies obviously have broad

discretion to reconsider a regulation at any time"). Even so, the EPA proposes that the authority

to revise the scope of a source category must be exercised only within reasonable boundaries and

cannot be employed in such a way as to result in an unreasonable expansion of an existing source

category, i.e., one that purports to expand a source category to cover a new set of sources that are

sufficiently umelated to the sources in the pre-existing category that they constitute a separate

48 Id. (footnote omitted).

source category for which the EPA is required to make a new contribute-significantly-andendangerment

finding as a prerequisite to regulating them. Otherwise, expanding the source

category by including new sources could be used to circumvent that requirement. The EPA

proposes to conclude that the 2016 expansion of the source category to include sources in the

transmission and storage segment did, in fact, exceed the reasonable boundaries of its authority

to revise source categories.

In the 2016 NSPS 0000a rule, the EPA purported to "support" its "revision" of the

source category by making the "requisite finding under section 111 (b)(1) that, in the

Administrator's judgment, this source category, as defined above, contributes significantly to air

pollution which may reasonably be anticipated to endanger public health or welfare."49 The EPA

is now proposing to find that this approach was erroneous.

Specifically, we are proposing that the EPA was required to make a finding that the transmission and storage segment in and of itself "contributes significantly to air pollution which may reasonably be anticipated to endanger public health or welfare," not simply that the source category, "as defined above" - i.e., defined to include "oil and natural gas production, processing, transmission, and storage"[50] - "contributes significantly." Nowhere in the course of promulgating the 2016 NSPS 0000a rule did the EPA make a finding that sources in the transmission and storage segment, in themselves, "contribute[] significantly to air pollution which may reasonably be anticipated to endanger public health or welfare." The EPA avoided making such a finding by purporting to have "revised" the source category by including that

49 81 FR 35833 (emphasis added).

so Id.

transmission and storage segment and then proceeding to find that the expanded source category "contributes significant! y."[51]

This approach, the EPA now proposes to find, was not appropriate. Had the EPA chosen to revise the source category list to include the "transmission and storage" segment as a separate source category, it could have done so only after making a finding that emissions from sources within that source category "cause(), or contribute significantly to air pollution which may reasonably be anticipated to endanger public health or welfare." Thus, if transmission and storage sources are sufficiently distinct from production and processing sources such that it would not be appropriate to include them in the Crude Oil and Natural Gas source category via revising of that source category, then the EPA could promulgate NSPS for them only if it first listed them as a separate source category, a step that the EPA has not taken. [52]

51 See 80 FR 35837-35840 (explaining "how GHG, VOC and S02 emissions" from the source category as revised to include the oil and natural gas production, processing, transmission, and storage segments, and not the transmission and storage segment itself, "are ' air pollution' that may reasonably be anticipated to endanger public health and welfare.").

52 In prior actions to expand a previously listed source category to include additional

sources

when the Agency considers the newly added sources to be logically connected to the sources

already in the source category, the EPA has taken different approaches, ranging from making a

significant contribution finding for the newly added sources, making such a finding for the newly

expanded source category, and not making such a finding at all. Compare "Standards of

Performance for New Stationary Sources; Priority List - Final Rule," 4 7 FR 31875, 31876 (July

23, 1982), "Standards of Performance for New Stationary Sources; Priority List - Proposed

Amendment," 45 FR 76427, 26427-28 (November 18, 1980) (expanding the "asphalt roofing

source category" to include "asphalt blowing stills and storage tanks at asphalt processing

facilities and petroleum refineries;" explaining that " [i]t is . .. reasonable to treat the asphalt

processing and roofing manufacture industry as a single category of sources" because the

processing and refinery sources are sites for " initial steps in the preparation of asphalt for roofing

manufacture" and " [t]he emissions, processes, and applicable controls for blowing stills and

asphalt storage tanks at oil refineries and asphalt processing plants are the same as those at

asphalt roofing plants;" determining that the added sources "contribute significantly to air

pollution which may reasonably be anticipated to endanger public health or welfare") with

"Standards of Performance for New Stationary Sources; Industrial-Commercial-Institutional

Steam Generating Units - Final Rule," 51 FR 42794, 42794-95 (November 25, 1986) (expanding

The EPA proposes to determine that transmission and storage sources are, in fact,

sufficiently distinct from production and processing sources that the EPA erred when, in the

2016 NSPS 0000a rule, it purported to revise the source category to include sources in the

transmission and storage segment. Specifically, the EPA proposes to determine that its

determination in the 2016 NSPS 0000a rule that equipment and operations at production,

processing, and transmission and storage facilities are a sequence of functions that are

interrelated and necessary for getting the recovered gas ready for distribution, was umeasonable.

We now propose that the transmission and storage operations are distinct from production and

processing operations because the natural gas that enters the transmission and storage segment

has different composition and characteristics than the natural gas that enters the production and

processing segments.

The primary operations of the production and processing segments are the exploration of

crude oil and natural gas products beneath the earth's surface, drilling wells that are used to

the source category of "industrial fossil fuel-fired steam generators" to "cover all steam

generators, including both fossil and nonfossil fuel-fired steam generators, as well as steam

generators used in industrial, commercial, and institutional applications;" explaining that "fossil

and nonfossil fuel-fired industrial, commercial, and institutional steam generating units should be

classified together as one source category ... [because they] emit similar pollutants, fire the same

fuels, and may employ the same emission control techniques [and] [t]heir impacts on human

health are similar;" determining that the source category as expanded "is a significant contributor

and an appropriate source category for regulation;" and adding that "[t]here is no requirement

that each subcategory of a listed category .. . also be significant contributors") and "Standards of

Performance for New Stationary Sources, Volatile Organic Liquid Storage Vessels (Including

Petroleum Liquid Storage Vessels) Constructed After July 23, 1984-Proposed Rule," 49 FR

29698, 29700 (July 23, 1984), "Standards of Performance for New Stationary Sources: Volatile

Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels)- Final Rule," 52

FR 11420, 11420 (April 8, 1987) (expanding the "synthetic organic chemical manufacturing

industry" (SOCMI) source category to include "storage vessels emitting VOC's located at plants

other than SOCMI plants, such as liquid bulk storage terminals;" explaining that those facilities

"store the same or similar liquids as those at SOCMI plants and ... can be controlled with the

same effectiveness, the same costs ... and the same control technology as storage vessels located

at SOCMI plants;" not making any determination concerning significant contribution).

extract these products, and processing the crude oil and field gas for distribution to petroleum

refineries and gas pipelines. As stated previously in this section, the EPA described

this source

category's operations similarly when proposing 40 CFR part 60, subpart KKK in 1984. 49 FR

2637. The primary purpose of these segments is to remove impurities from the extracted product.

At a well site (production segment), crude oil and natural gas are extracted from the ground.

Some processing can take place at the well site, such as the physical separation of gas,

production fluids, and condensate. The separated gas ("field gas") is then sent through gathering

pipelines to the natural gas processing plant (processing segment). At the processing plant, the

field gas is converted to sales gas or pipeline quality gas. This involves several steps including

the extraction of natural gas liquids (e. g. , a mixture of propane, butane, pentane) from the field

gas, the fractionation of these natural gas liquids into individual products (e. g. , liquid propane),

or both extraction and fractionation. The final natural gas that exits the processing plant is sales

gas, which is predominantly methane, as discussed above. In these segments, the field gas has

physically changed such that it is a usable product.

Analysis of the composition of gas on a nationwide basis in the various industry segments

confirms the different character of the segments. In 2011 and subsequently in 2018, the EPA

conducted an analysis of the composition, expressed in percent volume, of natural gas based on

the methane, VOC, and hazardous air pollutant (HAP) content across the various industry

segments.53,54 For example, in 2011 , the nationwide composition for the production segment,

which included wells and unprocessed natural gas, consisted of approximately 83 percent

53 Memorandum to Bruce Moore, U.S. EPA from Heather Brown, EC/R. "Composition of

Natural Gas for use in the Oil and Natural Gas Sector Rulemaking." July 2011. Docket ID Item

No. EPA-HQ-OAR-2010-0505-0084.

54 Memorandum to U.S. EPA from Eastern Research Group. "Natural Gas Composition."

November 13, 2018. Docket ID No. EPA-HQ-OAR-2017-0757.

methane, 4 percent voe, and less than I percent HAP. In contrast, the transmission segment,

which included pipeline and sales gas (i.e., post processing), consisted of approximately 93

percent methane, 1 percent voe, and less than 0.01 percent HAP. In 2018, the EPA reviewed

new studies available and found similar results. The nationwide composition for the production

segment consisted of approximately 88 percent methane and 4 percent voe. In addition, the

EPA determined the data was insufficient to include HAP in the final analysis. Limited updated

natural gas composition data were available for the transmission and storage segment. These

differences in the gas composition demonstrate that the emissions profile is different following

gas processing; however, the EPA recognizes that these numbers are nationwide and that

variations can occur from basin-to-basin within each segment. The fact that the original listing

was specific to voe and S02 emissions and that emissions of these pollutants are lower

downstream of the natural gas processing plant further support our interpretation that the 1979

listing included only the production and processing segments.

The operations of the transmission and storage segment differ from production and

processing because in the former, the natural gas does not undergo changes in composition,

except for some limited removal of liquids that condensed during the temperature and pressure

changes as the gas moves through the pipeline. Therefore, the natural gas that enters the

transmission and storage segment has approximately the same composition and characteristics as

the natural gas that leaves the segment for distribution. The segment includes natural gas

transmission compressor stations, whose primary operation is to move the natural gas through

transmission pipelines by increasing the pressure. Dehydration, which can also occur at

compressor stations, is a secondary operation used when the natural gas has collected water

during transmission. At storage facilities, natural gas is injected into underground storage for use

during peak seasons. 55 When demand increases, the natural gas is extracted from the

underground storage, dehydrated to remove water that has entered during storage, compressed,

and moved through distribution pipelines. It is the EPA' s understanding that processing of field

gas generally occurs within the production and processing segments. Operators within the

transmission and storage segment typically do not operate within the production and processing

segments and vice-versa.

These distinct differences in the operations, the physical transformation of the field

gas to

sales gas, and the physical movement of sales gas through pipelines establish that two separate

categories are necessary. This distinction is similar to the distinction the EPA has made between

other source categories with segments that handle the production and processing of a material

and subsequent transport of the product. One example is the petroleum industry. In that industry,

crude oil is produced through the extraction of material at well sites from beneath the earth's

surface. Crude oil is then transferred to refineries where it undergoes chemical and physical

changes that result in various formulations of gasoline. The refined gasoline is transmitted by

pipeline, ship, barge, or rail to bulk gasoline terminals that store the product in large above

ground tanks until it is loaded for transport to distribution networks. The segments of the

petroleum industry are also demarcated by product composition, the physical, and in the case of

the petroleum industry, chemical transformation of crude oil to refined gasoline products such as

gasoline, jet aircraft fuels, diesel fuel, motor oil, kerosene, asphalt, and sulfur. Production

55 Storage can also take place in above ground storage vessels; however, it is our understanding

that these are more commonly used after the city gate, which has not been included in the source

category at any point.

facilities, 56 refineries, 57 and bulk gasoline terminals58 all have operational differences, and the

EPA placed them in three different source categories. Those operational differences are similar

to the operational differences between the production and processing segments and the

transmission and storage segment at issue in this proposal.

It should be noted that in the 2016 NSPS 0000a rule, the EPA justified including the

transmission and storage segment in the Crude Oil and Natural Gas source category partly

because some similar equipment (e.g., storage vessels, pneumatic pumps, compressors) is used

across the industry. While that is true, the differences in the operations of, and the emission

profiles of, the different segments are more significant and support our proposal to exclude the

transmission and storage segment from the source category. A review of 2016 NSPS 0000a

compliance reports from sources in the EPA Regions (3, 6, 8, 9, and 10) with the greatest oil and

natural gas activity indicates that there were no storage vessels emitting more than 6 tons per

year (tpy) VOC reported in the transmission and storage segment.59 This supports our

understanding that VOC emissions are lower in the transmission and storage segment and

supports our understanding that any gas processing that occurs in the transmission and storage

segment generally is limited to removing liquids that condensed during the temperature and

pressure changes as the gas moves through the pipeline.

In summary, the EPA has not identified information from the original source category

listing that indicates the transmission and storage segment was included in the Crude Oil and

56 U.S. EPA. "Revised Prioritized List of Source Categories for NSPS Promulgation." March

1979. EPA-450/3-79-023.

57 38 FR 15406 (May 4, 1973); 39 FR 93 15 (March 8, 1974).

58 45 FR 83126 (December 12, 1980); 48 FR 3 7578 (August 18, 1983).

59 These reports have since been made available for public viewing at

https :llwww.fo iaonl ine. gov/Jo iaonl ine/ action/pub! iclsubmiss ionDetails? trackingNumber= EPAHQ-

2018-00 J 886&type =request.

Natural Gas Production source category. In fact, in 1985, the date of the first standards that the

EPA promulgated for the source category, the EPA clearly indicated that the source category was

limited (and should be limited) to the production and processing segments. Further, there are

distinct differences in operations and differences in the emissions profiles between the

production and processing segments and the transmission and storage segment. We are,

therefore, proposing to exclude transmission and storage sources from the Crude Oil and Natural

Gas Production source category.

B. Rescission of the NSPSfor Sources in Transmission and Storage Segment

A prerequisite for the EPA to promulgate an NSPS applicable to new sources is that the

new sources must be in a source category that the EPA has listed under CAA section 111 (b)(1).

For the reasons stated in section IV.A immediately above, the EPA is proposing to rescind as

improper the 2012 and 2016 rules' interpretations or extension of the source category to

encompass sources in the transmission and storage segment. Under the proposed rescission,

transmission and storage sources would not be contained within a listed source category.

Accordingly, the promulgation of NSPS for transmission and storage sources was contrary to

law, and as a result, the EPA is also proposing to rescind the NSPS in 0000 and 0000a for

emission sources in the transmission and storage segment. Specifically, we are proposing to

rescind the requirements for compressor affected facilities located downstream of the natural gas

processing plant; pneumatic controllers located downstream of the natural gas processing plant;

storage vessel affected facilities located downstream of the natural gas processing plant; and the

affected facility that is the collection of fugitive emission components located at a compressor

station.

C. Status of Sources in Transmission and Storage Segment

If this proposal is finalized, the transmission and storage segment will revert to the status

of a segment of the oil and natural gas industry not listed as a source category under CAA

section 11 l(b)(l)(A) and, thus, will not be subject to regulation under CAA section 11 l(b) (for

new sources) or CAA section 11 l(d) (for existing sources that emit certain air pollutants). The

emission sources in the transmission and storage segment will be in the same position as

emissions sources in other industries that the EPA has not listed as a source category under CAA

section 1 ll(b)(l)(A).

In the futur~, the EPA may evaluate these emissions more closely and determine whether

the transmission and storage segment should be listed as a source category under CAA section

11 l(b)(l)(A).60

D. Rescission of the Applicability to Methane of the NSPSfor Production and Processing

Segments

As the second of the two steps of its primary proposal, the EPA also is proposing to

rescind the methane requirements of the NSPS applicable to sources in the production and

processing segments. The EPA is proposing to find that, in the specific circumstances presented

here, the EPA lacked a rational basis to establish standards of performance for methane

emissions from the production and processing segments because those requirements are entirely

60 Methane emissions from the transmission and storage segment are 32 MMT CO2 Eq.(1 ,295 kt

methane) per the Inventory of United States Greenhouse Gas Emissions and Sinks: 1990-2017

(published April 11 , 2019), which amounts to 5 percent of United States methane emissions and

0.5 percent of total U.S. GHG emissions on a CO2 equivalent basis (using a GWP of 25 for

methane). With respect to VOC emissions, the transmission and storage segment emitted 16,252

tons in 2014, which amounts to just 0.51 percent of national VOC emissions from that year. With

respect to S02 emissions, there were 663 tons emitted from the transmission and storage segment

in 2014, or just 0. 79 percent of national S02 emissions. For HAP emissions, the transmission and

storage segment emitted 1,143 tons in 2014, or just 0.01 percent of national HAP emissions for

that year.

redundant with the existing NSPS for VOC, establish no additional health protections, and are,

thus, unnecessary. Rescinding the applicability to methane emissions of the 2016 NSPS 0000a

requirements, while leaving the applicability to VOC emissions in place, will not affect the

amount of methane reductions that those requirements will achieve, given the 2016 NSPS

0000a compliance monitoring assurances, including technologies and frequ~ncy of monitoring.

It is rational for the EPA to determine that requirements that are redundant to other

requirements are not necessary because they do not result in emission reductions beyond what

would otherwise occur. For example, in its 1977 proposed NSPS for Lime Manufacturing Plants,

the EPA proposed (and later promulgated) NSPS for particulate matter (PM) from lime plants,

but not S02, and explained that the particulate controls would have the effect of adequately

controlling S02. 42 FR 22506, 22507 (May 3, 1977). See National Lime Assoc. v. EPA, 627 F.2d

416, 426 n.27 (D.C. Cir. 1980) (quoting statements in the EPA's proposal). In effect, the EPA

recognized that S02 requirements would be redundant to PM requirements, and, for that reason,

declined to impose S02 requirements.61

The current NSPS requirements as applied to methane are redundant with the NSPS

requirements as applied to VOC. Indeed, for each emission source in the source category subject

to the NSPS, the requirements overlap completely. To understand this, it is important to

recognize the emissions profile and control technology for these emission sources. Each

emission source in the source category emits methane and VOC as co-pollutants through the

same emission points and processes. The requirements of the NSPS, including the emission

61 Similarly, the EPA declined to propose NSPS for (i) nitrogen oxides because they are emitted

in low concentrations or (ii) carbon dioxide because, among other things, regulation would

produce little environmental benefit, 42 FR 22507. These rationales for not proposing controls

for air pollutants are similar to the redundancy rationale - in all cases, the essential point is that

any controls would not result in meaningful emission reductions.

limits, required controls or changes in operations, monitoring, recordkeeping, reporting, and all

other requirements, apply to each emission source's emission points and processes and,

therefore, to each emission source's methane and voe emissions, in precisely the same way.

The capture and control devices that the emission sources use to meet the NSPS requirements are

the same for these co-pollutants and are not selective with respect to either voe or methane

emissions (though the concentration of voe and methane in the gas emitted from any particular

source will vary across types of affected facilities and geographic basins). 62

As a result, rescinding the applicability of the NSPS requirements to methane emissions

will have no impact on the amount of methane emissions. Each affected facility in the production

and processing segments will remain subject to the same NSPS requirements for voe to which

it was subject prior to the rescission, and those requirements will have the same impact in

reducing the emission source's methane emissions as before the rescission of the methane

requirements.

For example, the requirements for the collection of fugitive emissions components

located at a well site include the periodic monitoring for fugitive emissions using an optical gas

imaging (OGI) instrument. This instrument provides real-time visual images of He gas

emissions by using spectral wavelength filtering and an array of infrared (IR) detectors to

visualize the IR absorption of He and other gaseous compounds. As the gas absorbs radiant

energy at the same waveband that the filter transmits to the detector, the motion of the gas is

imaged. Since voe and methane emissions can be imaged within the same waveband, the OGI

62 Similarly, the capture and control technologies used to reduce voe and methane emissions

are also effective in reducing each source's emissions of volatile HAP. Please note that while cocontrol

is a favorable result, 40 eFR part 60, subpart 0000a does not apply to HAP emissions

from the source category.

instrument does not allow differentiation or speciation of the content of the emissions. Once a

fugitive emission is identified with 001, it must be repaired. Therefore, the same components are

monitored and repaired, regardless of the content of the emissions from the affected facility.

Thus, the proposed rescission of the applicability to methane will not change the applicability of

the fugitive emissions requirements. The same is true for the other NSPS requirements.

Other examples include the requirements for pneumatic controllers, pneumatic pumps,

and compressors. Pneumatic controllers are automated instruments used for maintaining a

process condition such as liquid level, pressure, pressure differential, and temperature.

Pneumatic controllers make use of the available high-pressure natural gas to operate or control a

valve. Natural gas may be released from these "gas-driven" pneumatic controllers with every

valve movement and continuously from the valve control pilot. Continuous bleed pneumatic

controllers can be classified into two types based on their emissions rates: (1) high-bleed

controllers and (2) low-bleed controllers. Replacing high-bleed controllers with low-bleed

controllers (or no-bleed and non-gas-driven controllers) non-selectively reduces methane and

VOC emissions. Pneumatic pumps are devices that use gas pressure to drive a fluid by raising or

reducing the pressure of the fluid by means of a positive displacement, a piston or a set of

rotating impellers. Gas powered pneumatic pumps are generally used at oil and natural gas

production sites where electricity is not readily available (Gas Research Institute/EPA, 1996) and

can be a significant source of methane and VOC emissions. Routing pneumatic pump emissions

to a pre-existing on-site control device, which combusts the gas, reduces methane and VOC

emissions non-selectively. Emissions from compressors occur when natural gas leaks around

moving parts in the compressor. In a reciprocating compressor, emissions occur when natural gas

leaks around the piston rod when pressurized natural gas is in the cylinder. Over time, during

operation of the compressor, the rod packing system becomes worn and will need to be replaced

to prevent excessive leaking from the compression cylinder. Replacement of the compressor rod

packing, replacement of the piston rod, and the refitting or realignment of the piston rod reduces

methane and voe emissions non-selectively. Emissions from centrifugal compressors depend

on the type of seal used: either "wet," which uses oil circulated at high pressure, or "dry," which

uses a thin gap of high-pressure gas. The use of dry gas seals substantially reduces emissions.

Routing emissions to the combustion device is also an option for reducing emissions from

centrifugal compressors. In either case, the use of dry seals or combustion device reduces

methane and voe non-selectively. The proposed rescission of applicability to methane will not

change the applicability of these requirements or that methane will be reduced as a co-reduction

ofVOe.

Furthermore, any fugitive detection and measurement approach currently approved or

approved under the Alternative Means of Emissions Limitations that speciates emissions, would

still identify fugitive emissions as defined by any visible emissions observed using OGI and

require repair. That is, the NSPS requirements as applied to voe will reduce methane in the

same amounts as those requirements, as applied to methane, would as long as OGI with current

levels of sensitivity to methane continue to be used. The EPA is aware that several new

technologies are under development that would detect speciated fugitive emissions from oil and

natural gas operations. We solicit comment on these new technologies and the need to evaluate

the current fugitive emission detection technology specifications to determine that the level of

control remains as protective.

As the EPA noted in the proposal for the 2016 NSPS 0000a rule, the EPA has

discretion to determine which pollutants emitted from a listed source category warrant

regulation. The EPA has historically considered, among other things, the amount of the pollutant

and "ha[s] ' historically declined to propose standards for a pollutant [that] is emit[ted] in low

amounts .... "' 80 FR 56599 (quoting 75 FR 54970, 54997 (September 9, 2010).63 In the case of

the Oil and Natural Gas source category, there are no methane emissions from the sources

subject to the NSPS beyond those emissions already subject to control by the provisions to

control VOC in the NSPS. Accordingly, there is no need to add NSPS requirements applicable to

methane. 64

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63 This discussion assumes that the EPA will retain the statutory interpretation set forth in the

2016 NSPS 0000a rule of its authority under CAA section 111 to add new regulations to

previously-regulated source categories, and that it will not adopt the alternative statutory

interpretation on which it solicits comment in section VI.A below.

64 In the 2016 NSPS 0000a final rule, the EPA stated:

While the controls used to meet the VOC standards in the 2012 NSPS also reduce

methane emissions incidentally, in light of the current and projected future GHG

emissions from the oil and natural gas industry, reducing GHG emissions from

this source category should not be treated simply as an incidental benefit to VOC

reduction; rather, it is something that should be directly addressed through GHG

standards in the form oflimits on methane emissions under CAA section 11 l(b)

based on direct evaluation of the extent and impact of GHG emissions from this

source category and the emission reductions that can be achieved through the best

system for their reduction. The standards detailed in this final action will achieve

meaningful GHG reductions and will be an important step towards mitigating the

impact of GHG emissions on climate change.

81 FR 35841.

After further consideration, the EPA proposes to come to a different conclusion about the need

for methane requirements, for the reasons discussed in this section and below.

65 The EPA notes that removing the applicability of the NSPS to methane emissions does not

alter the basis for the applicability of the NSPS to VOC emissions for affected sources in the

source category, which for some affected sources have been regulated since the 2012 NSPS

0000 rule. To determine BSER, the EPA assesses a set of factors, which include the amount of

emissions reduction, costs, energy requirements, non-air quality impacts, and the advancement of

particular types of technology or other means of reducing emissions, and retains discretion to

weight the factors differently in any case. In the 2016 NSPS 0000a, the EPA gave primary

weight to the amount of emission reductions and cost. The EPA describes this analysis in depth

The EPA recognizes that in proposing to rescind one set of standards in part for its

redundancy with another set, the EPA is choosing to rescind the applicability of those standards

to methane emissions and not VOC emissions, rather than vice-versa. Rescinding the methanespecific

standards is reasonable because the requirements for VOC and correspondingly, sources'

compliance with those requirements, are longer established than those for methane. As described

earlier, the EPA regulated VOC first, beginning in 1985 and continuing in 2012, and then added

regulation of methane for some sources in 2016.

Additionally, redundancy is not uniform across affected facilities in the sector. Some

sources, such as storage vessels, are subject only to VOC requirements and not methane

requirements. For those sources, it cannot be said that regulation of VOC is redundant to

regulation of methane because the EPA has not regulated methane from them. For these reasons,

in choosing between the two requirements, the EPA considers it appropriate and less disruptive

to rescind the methane standards.

V. Rationale for Alternative Proposal to Rescind the Methane Standards for All Sources in

the Oil and Gas Source Category Without Revising the Source Category

A. Alternative Proposed Action to Rescind the Methane Standards

In this action, the EPA is proposing in the alternative to rescind the methane requirements

in the 2016 NSPS 0000a without any action that would address the scope of the industry

in the 2015 NSPS 0000a proposal at 80 FR 56618-56620 and 80 FR 56625-56627. For the

source types in the production and processing segments, the NSPS requirements, considered on a

VOC-only basis, are cost effective (relatively low cost and relatively high emissions reductions).

See memorandum titled "Draft Control Cost and Emission Changes under the Proposed

Amendments to 40 CFR Part 60, subpart 0000a Under Executive Order 13783," in the public

docket for this action. The EPA provides this information for the benefit of the public

and is not

reopening the above-described determination in the 2016 NSPS 0000a that the VOC-only

requirements for sources in the production and processing segments meet the requirements of

CAA section 111."

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segments covered by these requirements or to alter the VOC requirements applicable to those

industry segments. In contrast to the proposal discussed above in section IV, this alternative

proposal does not affect the scope of the source category, including the types of sources included

in the source category. Thus, this alternative proposal would not eliminate sources in the

transmission and storage segment from the source category. This alternative proposal is based on

the rationale described below.

B. Rationale for Rescinding the Methane Standards

Under this alternative proposal, the EPA's basis for proposing to rescind the applicability

to methane of the NSPS for all sources in the source category is essentially the same as the

EPA' s basis for proposing the same action for sources in the production and processing

segments, described in section IV above. Briefly, the EPA is proposing to rescind the methane

requirements applicable to the source category because they are wholly redundant with the

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existing VOC requirements. 66

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67 Section VI of this preamble takes comment on alternative

questions of statutory interpretation and associated potential record determinations which, if the

EPA were to adopt them, might provide an additional or alternative basis for both the primary

and the alternative proposal.

VI. Solicitation of Comment on Significant Contribution Finding for Methane

As noted above, the primary and alternative proposals set forth in this notice rely on the

EPA's previous position, which it took in the 2016 NSPS 0000a rule, that (1) CAA section 111

does not require the Agency to make a pollutant-specific determination that the Crude Oil and

Natural Gas Production source category's emissions of methane cause or contribute significantly

66 As noted above, in the 2015 proposal for the 2016 NSPS 0000a rule, we justified regulating

methane emissions on grounds that "reducing methane emissions from this source category

cannot be treated simply as an incidental benefit to VOC reduction," 80 FR 56599, but our

current view is that what is important is that the VOC requirements will assure that the methane

emissions reductions occur. In addition, as noted above, the cost effectiveness of the VOC

requirements for sources in the production and processing segments supports retaining those

requirements for those sources, and we are not reopening our determination in the 2016 0000a

NSPS that, on a VOC-only basis, the requirements for sources in the production and processing

segments meet CAA section 111 requirements. The same is true for the sources in the

transmission and storage segment under this alternative proposal. We consider VOC emissions

regulation alone to qualify as NSPS based on the BSER. As we noted with respect to sources in

the production and processing segments, removing the applicability of the NSPS to methane

emissions dqes not alter the basis for the applicability of the NSPS to VOC emissions for

affected sources in the source category, which for some affected sources have been regulated

since the 2012 NSPS 0000 rule. To determine BSER, the EPA assesses a set of factors, which

include the amount of emissions reduction, costs, energy requirements, non-air quality impacts,

and the advancement of particular types of technology or other means of reducing emissions; this

assessment requires the EPA to exercise discretion in weighing these factors against each other.

In the 2016 NSPS 0000a, the EPA gave primary weight to the amount of emission reductions

and cost. The EPA describes this analysis in depth in the 2015 proposal at 80 FR 56616 to

56645. The EPA provides this information for the benefit of the public and is not reopening the

above-described VOC-only BSER determination for the production, processing, transmission,

and storage segments made in the 2016 NSPS 0000a.

67 80 FR 56616 to 56645, 83 FR 52056, and memorandum titled "Draft Control Cost and

Emission Changes under the Proposed Amendments to 40 CFR Part 60, subpart 0000a Under

Executive Order 13783," in the public docket for this action.

to air pollution that may reasonably be anticipated to endanger public health or welfare, as a

prerequisite to promulgating an NSPS for methane; and (2) in the alternative, if CAA section 111

were interpreted to require such a determination for the 2016 NSPS 0000a rule, the source

category's emissions do cause or contribute significantly to air pollution that may reasonably be

expected to endanger public health or welfare.68 Although the determination that CAA section

11 1(b)(1)(A) requires is commonly referred to as an "endangerment finding," it entails two

separate elements: (1) a finding that certain air pollution may reasonably be anticipated to

endanger public health or welfare, and (2) a finding that the source category's emissions of air

pollutants cause or contribute significantly to that air pollution. This section focuses on the latter

element, which we refer to as the "significant contribution finding" (SCF). It should also be

noted that in prior contexts in which the EPA has made these findings with regard to OHO,

including the 2016 NSPS 0000a rule, the EPA has considered the "air pollution" that may

reasonably be anticipated to endanger public health or welfare to be the elevated concentration in

the atmosphere of six well-mixed gases (of which, CO2 and methane are emitted in the largest

68 In the 2016 NSPS 0000a rule, the EPA stated:

Some commenters have argued that the EPA is required to make a new

endangerment finding before it may set limitations for methane from the oil and

natural gas source category. We disagree .. .. Moreover, even if CAA section 111

required the EPA to make an endangerment finding as a prerequisite for this

rulemaking, then, the information and conclusions described above ... should be

considered to constitute the requisite finding (which includes a finding of

endangerment as well as a cause-or-contribute significantly finding). More

specifically, . .. [t]he facts [that the EPA marshaled in support of the 2009

Endangerment Finding] have only grown stronger and the potential adverse

consequences of OHO to public health and the environment more dire [since

2009] . The facts also demonstrate that the current methane emissions from oil and

natural gas production sources and natural gas processing and transmission

sources contribute substantially to nationwide OHO emissions.

81 FR at 35843.

quantities); and the EPA has considered the "air pollutants" that may cause or contribute to that

air pollution to be the same six GHG. See 81 FR 35843. In the 2016 NSPS 0000a rule, for convenience, the EPA sometimes referred to the "air pollutants" as methane, in recognition of the fact that methane is the largest quantity of GHG emitted by the Oil and Natural Gas source category. We take the same approach and use the same terminology in this rulemaking.

In this proposal, the EPA proposes to retain its current interpretation that it is not required to make a pollutant-specific SCF, for the same reasons that it noted in the 2016 NSPS 0000a rule. 81 FR at 35841-43. However, the EPA solicits comment on whether it should revise its positions in the 2016 NSPS 0000a rule concerning the requirement to make a pollutantspecific SCF under CAA section 111 (b), as well as, in light of the statutory term "significantly contributes to," the level of contribution that methane from oil and natural gas sources makes to GHG air pollution. In particular, in subsections A, B, and C of this section, the EPA solicits comment on (A) whether CAA section 111 requires the EPA to make a pollutant-specific SCF for GHG emissions (again, primarily methane) from the source category as a prerequisite to regulating those emissions; (B) if so, whether the SCF for methane emissions from the source category that the EPA made in the alternative in the 2016 NSPS 0000a rule properly satisfied that requirement; and (C) what criteria are appropriate for the EPA to consider in making a SCF, both as a general matter and with particular reference to GHG emissions generally and to methane emissions from this source category most particularly. Further, the EPA solicits comment on whether, should we determine (1) that it was necessary as a matter oflaw for the EPA to have made a pollutant-specific SCF finding for GHG emissions (or, if the statute does not compel that interpretation, whether that is a reasonable interpretation); and (2) that the SCF for methane emissions from the source category that the EPA made in the alternative in the 2016

NSPS 0000a rule did not properly satisfy that requirement, those determinations, in and of themselves, would either compel us or authorize us to repeal the 2016 NSPS 0000a rule.

A. Requirement for Pollutant-Specific Significant Contribution Finding

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As noted earlier, CAA section 111 (b)(1) sets out a multi-step process for the EPA to promulgate NSPS. First, the EPA is required to list a source category if"in [the Administrator's] judgment it causes, or contributes significantly to, air pollution which may reasonably ~e anticipated to endanger public health or welfare." CAA section 11 l(b)(l)(A). Then, the EPA is required to propose and then promulgate "standards of performance for new sources within such category." CAA section 11 l(b)(l)(B). A "standard of performance" is defined as "a standard for emissions of air pollutants" that the EPA is required to calculate through a particular methodology. CAA section 11 l(a)(l). The EPA has interpreted these provisions to require that it make a SCF for the combined air pollutant emissions, taken as a whole, from the source category in order to list the source category, and then to require it to promulgate standards of performance for the emissions once it has listed the source category, but not require it to make pollutantspecific SCFs as another prerequisite to promulgating those standards of performance. 80 FR 64529-31 (Electricity Generating Units (EGU) CO2 NSPS rule), 81 FR 35841-42 (2016 NSPS 0000a rule).

The EPA articulated this interpretation of CAA section 11 l(b)(l)(A) during the course of two rulemakings to promulgate NSPS for GHG, completed in 2015-2016, but comrnenters called it into question. In those rulemakings, the EPA promulgated, for the first time, NSPS for GHG, primarily CO2, from fossil-fuel fired EGUs (including steam-generating boilers and combustion turbines), "Standards of Performance for Greenhouse Gas Emissions from New, Modified, and Reconstructed Stationary Sources: Electric Utility Generating Units - Final Rule," 80 FR 64510,

64530 (October 23 , 2015) (EGU CO2 NSPS rule),69 and methane from the Crude Oil and Natural Gas Production source category, 81 FR 35843 (the 2016 NSPS 0000a rule). In the proposal for the EGU CO2 NSPS rule, the EPA took the position that it was not required to make a pollutantspecific SCF for CO2 emissions from EGUs in order to promulgate an NSPS regulating those emissions. 79 FR 1430, 1452-55 (January 8, 2014). Commenters stated that under the EPA's interpretation, the EPA would have the authority to promulgate an NSPS for a air pollutant that a

source category emits in relatively small amounts (or, with respect to the endangerment finding,

that is relatively benign in its effect on public health or welfare). This is because, under the

EPA's interpretation, once the Agency lists a source category, it proceeds to regulate a particular

air pollutant emitted from the category without being required to make a SCF for the source

category's emissions of that air pollutant. See generally 81 FR 35843; 80 FR 64530. These

concerns about the two GHG NSPS rulemakings are highlighted by the fact that when the EPA

listed the source categories - EGU Steam-Generating Boilers in 1971 , Combustion Turbines in

1977, and Crude Oil and Natural Gas Production in 1979 - and first began to regulate them, the

EPA did not mention GHG. Rather, the SCFs for the source categories did not identify the air

pollutants, and the initial regulations -- which were largely contemporaneous with the listing

notices -- concerned emissions of other air pollutants. See 36 FR 5931 (March 31 , 1971), 36 FR

24876 (December 23, 1971) (EGU Steam-Generating Boilers; (PM, S02, NOx); 42 FR 53657, 42

FR 53782 (October 3, 1977), (EGU Combustion Turbines; S02, NOx); 44 FR 49222 (August 21 ,

1979) (Crude Oil and Natural Gas Production; HC and S02). Thus, there is no indication that the

EPA considered GHG in listing the source categories.

69 In the EGU CO2 NSPS rule, the EPA considered the "air pollutants" relevant for the SCF to be

GHGs, but because CO2 was the GHG emitted in the greatest quantity by EGUs, the EPA often

described that finding as referring to CO2. 80 FR 64531 and n.110; 64537.

In both the EGU CO2 NSPS rule and the 2016 NSPS 0000a rule, the EPA asserted that

CAA section 111 authorizes it to regulate a source category's emissions of an air pollutant

without a pollutant-specific SCF as long as the EPA has a "rational basis" for doing so. The EPA

based this view on previous rulemakings, in which the EPA had declined to promulgate NSPS

for certain air pollutants from various source categories on grounds that the amounts of

emissions of those air pollutants were so small that regulating them would not be rational, and on

D.C. Circuit caselaw.70 In the EGU CO2 NSPS rule and the 2016 NSPS 0000a rule, the EPA

went on to determine that it did have a rational basis for regulating CO2 and methane,

respectively, which consisted of assessing the amount of emissions of the GHG from the source

category in the light of various metrics, coupled with the fact that the EPA had previously

determined, in the 2009 Endangerment Finding, that six well-mixed gases constitute GHG air

pollution that may reasonably be anticipated to endanger public health and welfare under section

202(a) of the CAA. "Endangerment and Cause or Contribute Findings for Greenhouse Gases

70 Specifically, in the 2016 NSPS 0000a rule, the EPA stated that in National Lime Assoc. v.

EPA, 627 F.2d 416 (D.C. Cir. 1980), the Court had "discussed, but did not review, the EPA's

reasons for not promulgating standards for NOx, S02, and CO from lime plants." See 81 FR

35842; see also 80 FR 64530. The discussion in National Lime Assoc. consisted of the Court's

observation, in setting forth the procedural history of the rulemaking at issue, that "[a]lthough

lime plants were determined to be sources of nitrogen oxides, carbon monoxide and sulfur

dioxide as well as particulates," standards "were proposed and ultimately promulgated only with

respect to particulate matter." 627 F.2d at 426. In a footnote, the Court then quoted at length

from a portion of the preamble to the proposed NSPS in which the EPA had "explained its

decision not to propose standards" for those three pollutants. Id. at 426 n.27. The only place the

phrase "rational basis" appears in National Lime Assoc. is located in a passage in which the

Court rejects industry's claim that the EPA had erred in its "determination that lime

manufacturing plants 'may contribute significantly to air pollution which causes or contributes to

the endangerment of public health or welfare."' Id. at 431 n.48. Said the Court: "We think the

danger of particulate emissions' effect on health has been sufficiently supported in the Agency's

... previous determinations to provide a rational basis for the Administrator's finding in this

case." Id. (emphases added). "Moreover," the Court continued, "whatever its impact on public

health, we cannot say that a dust 'nuisance' has no impact on public welfare." Id. (emphasis

added).

Under Section 202(a) of the Clean Air Act - Final rule," 74 FR 66496 (December 15, 2009)

(2009 Endangerment Finding). It should be noted that in both the EOU CO2 NSPS rule and

the

2016 NSPS 0000a rule, the EPA also stated that, in the alternative, if it were required to make

a pollutant-specific SCF for OHO (with a focus on CO2 and methane, respectively), it was

making that finding, citing the same information that it relied on for the rational basis

determinations. See 80 FR 64 529-31 (EOU CO2 NSPS rule), 81 FR 3 5 841-4 3 (2016 NSPS

0000a rule) (both citing the 2009 Endangerment Finding).

In this action, we solicit comment on whether the interpretation of CAA section

11 l(b)(l)(A) that the EPA set forth in the 2016 NSPS 0000a rule is correct, or instead whether

that provision should be interpreted to require that the EPA make a SCF on a pollutant-specific

basis for a source category as a prerequisite for regulating emissions of that pollutant from the

source category. The EPA also solicits comment on whether (1) either its current interpretation

or the alternative interpretation discussed in this subsection is the only permissible interpretation

of the SCF provision, or (2) that provision is ambiguous and leaves room for the exercise of

policy discretion on the EPA's part as to which circumstances call for a pollutant-specific SCF as

a predicate for regulating an additional pollutant emitted from an already-listed source category,

and, if the latter, whether OHO emissions in general or methane emissions from the oil and

natural gas sector in particular present specific circumstances making a pollutant-specific SCF

appropriate or required for this source category. If the provision is ambiguous, the benefits of

assuring that only pollutants for which the EPA makes a SCF become subject to NSPS, as

opposed to pollutants that, for example, may be emitted in relatively minor amounts, support

interpreting the provision to require a pollutant-specific SCF.

The provisions in CAA section 11 l(b)(l)(A) that require the Administrator to "include a

category of sources in such list if in his judgment it causes, or contributes significantly to, air

pollution which may reasonably be anticipated to endanger public health or welfare," when read

in isolation and when compared to analogous text in other provisions of similar import elsewhere

in the CAA, e.g. , section 202(a)(l) and other provisions noted below, does appear to contemplate

that the EPA is required to make a SCF for the source category only when it is first added to the

list. This was the basis for the EPA' s position in the EGU CO2 NSPS rule and the 2016 NSPS

0000a rule that the Agency is not required to make a pollutant-specific SCF in order to

regulate an additional pollutant from an already-listed source category.

However, even if the wording of the SCF does suggest that the EPA is required to make

that finding only when listing a source category, the EPA is mindful that an Agency "[may]

avoid a literal interpretation at Chevron step one . .. [by] show[ing] either that, as a matter of

historical fact, Congress did not mean what it appears to have said, or that, as a matter of logic

and statutory structure, it almost surely could not have meant it." Engine Mfrs. Ass 'n v. EPA, 88

F.3d 1075, 1089 (D.C. Cir. 1996). 71 We solicit comment on whether the discussion below

provides either reasons that Congress "almost surely could not have meant" the SCF provision to

mean what the EPA read it to mean in the 2016 NSPS 0000a rule, evidence that "as a matter of

historical fact Congress did not mean" that, or both-and, if so, whether the EPA is required to,

71 See, e.g. , Logan v. US., 552 U.S. 23, 36-37 (2007) (" [s]tatutory terms, we have held, may be

interpreted against their literal meaning where the words. 'could not conceivably have been

intended to apply' to the case at hand [citation omitted]"; US. v. Ron Pair Enterprises, 489 U.S.

235, 242 (1989) (literal meaning of a statutory provision is not conclusive "in the 'rare cases [in

which] the literal application of a statute will produce a result demonstrably at odds with the

intentions of the drafters' . .. [in which case] the intention of the drafters, rather than the strict

language, controls" [citation omitted]); Watt v. Alaska, 451 U.S. 259, 266 (1981) ("[t]he

circumstances of the enactment of particular legislation may persuade a court that Congress did

not intend words of common meaning to have their literal effect").

or whether it would be reasonable for the EPA to, adopt an alternative interpretation of CAA

section 11 l(b)(l)(A) under which the EPA is required to make a pollutant-specific SCF in order

to regulate a particular pollutant emitted by a source category.

There are several reasons why this approach to interpreting CAA section 111 (b)(1)(A)

might be reasonable. The first is the potentially anomalous results that could occur

under the

EPA's current interpretation that CAA section 11 l(b)(l)(A) does not require a pollutant-specific

SCF. For example, under the EPA' s current interpretation, the EPA could list a source category

on grounds that it emits numerous air pollutants that, taken together, significantly contribute to

air pollution that may reasonably be anticipated to endanger public health or welfare, and

proceed to regulate each of those pollutants, without ever finding that each (or any) of those air

pollutants by itself causes or contributes significantly to - or, in terms of the text of other

provisions, causes or contributes to -- air pollution that may reasonably be anticipated to

endanger public health or welfare. It is clear that CAA section 111 (b) requires the EPA, and

CAA section 11 l(d) requires the states, to regulate on a pollutant-by-pollutant basis - CAA

section 111 (b)(1)(B) and (d)(l) require the EPA and the states, respectively, to promulgate for

the affected sources "standards of performance," which, as noted above, are defined in relevant

part as "standard(s] for emissions of air pollutants" - as a result, it seems potentially anomalous

not to require that the EPA make a SCF for those pollutants as a prerequisite for promulgating

the standards of performance.

Second, although the EPA's current interpretation that only a "rational basis" is needed to

justify regulating emissions of an additional pollutant from an already-listed source category

offers some protection against arbitrary or capricious decisions by the EPA, that type of

determination appears to be largely undefined. CAA section 11 l(b)(l)(A) does not provide or

suggest any criteria to define it. In the EGU CO2 NSPS and 2016 NSPS 0000a rules, the EPA

did not describe any criteria for applying that approach, and in instances before then in which the

EPA has relied on the "rational basis" approach, the EPA has done so to justify not setting

standards for a given pollutant, rather than to justify setting a standard for a pollutant. 80 FR

64530. The EPA solicits comment on whether it is rational to interpret the SCF provision as

setting a specific finding that needs to be made only one time (at the stage of source

category

listing), with the standard for the subsequent regulation of some other pollutant emitted from

that source category defaulting to rational basis, a standard which applies to any action the EPA

or, in fact, any agency, takes, see 5 U.S.C. 706(2)(A) (under the Administrative Procedure Act,

agency decisions may be set aside if they are "arbitrary, capricious, an abuse of discretion, or

otherwise not in accordance with law"), or whether instead Congress "almost surely could not

have meant" that.

Third, the other sections of the CAA, cited below, under which the EPA makes an

endangerment and cause or contribute finding as a prerequisite for regulating emissions, do

generally contemplate that the cause or contribute finding will be made on a pollutant-specific

basis. The fact that Congress saw fit to frame the cause or contribute requirement on a pollutantspecific

basis for other CAA provisions might reasonably be viewed as heightening the anomaly

of interpreting CAA section 111 (b)(1)(A) not to impose the same requirement. The EPA solicits

comment on whether its current interpretation of the CAA section 111 SCF provision, as set

forth in the 2016 NSPS 0000a rule, correctly determined that this apparent anomaly is, in fact,

a deliberate and significant variation on Congress's part, or whether instead Congress "almost

surely could not have meant" that.

In addition, the legislative history of CAA section 11 l(b)(l)(A) contains several items

that might be read to indicate that Congress did "as matter of historical fact" intend to require

that the EPA make a pollutant-specific SCF as a prerequisite for regulating any particular

pollutant emitted by a source category. Congress added CAA section 111 when it amended the

CAA in 1970. At that time, Congress drafted CAA section 111 (b)(1) in much the same form as it

appears today, explicitly requiring the endangerment finding, including the SCF, on the basis of

the source category, although it phrased the finding somewhat differently: "[The Administrator]

shall include a category of sources in such list if he determines it may contribute significantly to

air pollution which causes or contributes to the endangerment of public health or welfare." 42

U.S.C. 1857c-6(b)(l)(A).(1970). At the same time, Congress added several other provisions that

contemplated that the EPA would make endangerment or cause or contribute findings, and

although Congress used somewhat different phrasing in some of those provisions, in each one,

Congress framed the relevant finding on a pollutant-specific basis. See CAA section

108(a)(l)(A)-(B), 42 U.S.C. 1857c-3(a)(l)(A)-(B) (1970) (Administrator is required to publish a

list "which includes each air pollutant which in his judgment has an adverse effect on public

health or welfare" and "the presence of which in the ambient air results from numerous or

diverse mobile or stationary sources")72 ; CAA section 115(a), 42 U.S.C. 1857d(a) (1970)

72 This provision is similar to section 3(c)(2) of the CAA of 1963, Pub. L. 88-206 (December 17,

1963):

Whenever [the Secretary of the Department of Health, Education, and Welfare]

determines that there is a particular air pollution agent (or combination of agents),

present in the air in certain quantities, producing effects harmful to the health or

welfare of persons, the Secretary shall compile and publish criteria reflecting

accurately the latest scientific knowledge useful in indicating the kind and extent

of such effects which may be expected from the presence of such air pollution

agent (or combination of agents) in the air in varying quantities.

(Administrator is authorized to take action to address "pollution of the air in any State or States

which endangers the health or welfare of any persons"); CAA section 202(a)(l), 42 U.S.C.

1857f-1 (a)(l) (1970) (Administrator is required to regulate "the emission of any air pollutant

from any class or classes of new motor vehicles or new motor vehicle engines, which in his

judgment causes or contributes to, or is likely to cause or to contribute to, air pollution which

endangers the public health or welfare");73 CAA section 21 l(c)(l), 42 U.S.C. 1857f-6(c)(l)

(1970) (Administrator is authorized to regulate "any fuel or fuel additive for use in a motor

vehicle or motor vehicle engine if any emission products of such fuel or fuel additive will

endanger the public health or welfare"); CAA section 231 (a)(2), 42 U.S.C. 1857f-9(a)(2) (1970)

(Administrator is required to regulate "emissions of any air pollutant from any class or classes of

aircraft or aircraft engines which in his judgment cause or contribute to or are likely

to cause or

contribute to air pollution which endangers the public health or welfare").

In the 1970 CAA Amendments, Congress did not explain why it used language in CAA

section 111 that suggested a SCF for the source category under CAA section 111 while using

pollutant-specific language in the other provisions, but the reason appears to be that under CAA

section 111 , Congress tasked the EPA with determining, among the large numbers of highly

diverse stationary sources in the U.S., which ones, grouped into which source categories, should

73 This provision is similar to section 202(a) of the CAA, as adopted in the Motor Vehicle Air

Pollution Control Act of 1965, Pub. L. 89-271 (October 19, 1965):

The Secretary shall by regulation, giving appropriate consideration to

technological feasibility and economic costs, prescribe as soon as practicable

standards, applicable to the emission of any kind of substance, from any class or

classes of new motor vehicles or new motor vehicle engines, which in his

judgment cause or contribute to, or are likely to cause or to contribute to, air

pollution which endangers the health or welfare of any persons . . ..

be listed and subject to regulation. It was logical for Congress to constrain the EPA's discretion

by requiring that the EPA make a SCF for each source category that it sought to list. While it is

true that in drafting CAA section 111 (b)(1)(A), Congress did not explicitly require the EPA to

make an additional, pollutant-specific SCF, it seems reasonable to think that Congress may have

intended pollutant-specific SCF findings but conflated them with the required source-category

SCF finding. Support for this interpretation may be found in the fact that under CAA section

111 , a source category can cause or significantly contribute to air pollution only through

emissions of its air pollutants, CAA section 11 l(b)(l)(B) requires the EPA to promulgate

"standards of performance" for air pollutants, and CAA section 111 (a)(l) defines a "standard of

performance" as a "standard of emissions for air pollutants" (emphasis added). The EPA solicits

comment on whether these provisions, read together with CAA section 11 l(b)(l)(A), are

evidence that Congress intended the latter to require what is required in the other CAA

provisions discussed here: a pollutant-specific finding. Certainly, interpreting CAA section

11 l(b)(l)(A) to require such a pollutant-specific finding would make it consistent

with those

other CAA provisions.

In the 1977 CAA Amendments, Congress rephrased the text in each of the above-noted

provisions to read as they do at present, which is generally the same phrasing as in CAA section

111 (b)(1)(A) in relevant part, except that for the other provisions, Congress did not require the

contribution component of the findings to be based on a "significant" contribution and, with the

possible exception of CAA section 202(a), discussed below, Congress continued to focus the

cause or contribute findings on air pollutants. The legislative history generally describes

Congress's purpose as providing, across all the relevant provisions, and consistent with the D.C.

Circuit's decision in Ethyl Corp. v. EPA, 541 F.2d 1 (D.C. Cir.) (en bane), cert. den. 426 U.S.

941 (1976), a uniform standard of proof that allows the Administrator to regulate pollutants

based on the need to prevent harm before it occurs, rather than require the Administrator to delay

regulating until after actual harm has been proven to have occurred. H.R. Rep. No. 94-1175 at

32-33 (1976).

Importantly, the legislative history of the 1977 SCF provisions can also be read as

evidence that Congress understood at that time that the EPA was to make a pollutant-specific

SCF under CAA section 111. The SCF provisions originated in the House bill, did not have a

counterpart in the Senate bill, and were adopted by the Conference Committee as they appeared

in the House bill. The Conference Report summarized the House bill as follows, in relevant part:

House bill

Provides a uniform standard of proof for EPA regulation of air pollutants which

applies to the setting of ... criteria for national ambient air quality standards under

Section 108; ... new stationary source performance standards under Section 111;

new auto emission standards under Section 202; ... regulations of fuels and

fuel additives under Section 211 ; aircraft emission standards under Section 231.

In all future rulemaking in these areas, the Administrator could regulate any air

pollutant from those sources, the emissions of which "in his judgment cause or

contribute to air pollution which may reasonably be anticipated to endanger public

health or welfare. "

H.R. Rep. No. 95-564, at 183-84 (1977) (emphasis added). The emphasized language may

be

evidence that Congress, in fact, intended to require the EPA (or, indeed, understood that the EPA

had always been required), in promulgating a pollutant-specific NSPS under CAA section 111,

to make a pollutant-specific finding, as it does under the other provisions mentioned in the

Conference Report.

The House Committee Report included a similar statement in describing one of its

purposes for rephrasing the various endangerment finding provisions: "To provide the same

standard of proof for regulation of any air pollutant, whether that pollutant comes from

stationary or mobile sources, or both, and to make the vehicle and fuel industries equally

responsible for cleaning up vehicle exhaust emissions." H.R. Rep. No. 94-1175, at 33 (1976)

(emphasis added). The emphasized phrase could suggest that the House Committee drafters

understood the SCF provision in CAA section 111 (b)(1)(A) to concern the particular air

pollutant subject to regulation (i.e., the NSPS), like, at least for the most part, the other analogous

provisions. 74

74 It should be noted that in the 1970 and 1977 CAA Amendments, Congress added or amended

several other provisions that included findings similar to the findings in CAA sections

108(a)(1)(A), 11 1(b)(1)(A), 115, 202(a), 21 1(c)(1), and 231(a)(2)(A). These provisions include

the following, (as they read after the 1977 CAA Amendments and before any changes in the

1990 CAA Amendments): (1) CAA section 112 (added in 1970 CAA Amendments and revised

in 1977 CAA Amendments; "hazardous air pollutant" is defined as, in relevant part, "an air

pollutant ... which in the judgment of the Administrator causes, or contributes to, air pollution

which may reasonably be anticipated to result in an increase in mortality or an increase in serious

irreversible, or incapacitating reversible, illness;" this definition was substantially revised in

1990 CAA Amendments); and (2) CAA section 21 1(c)(1)(A) (added in 1970 CAA Amendments

and revised in 1977 CAA Amendments; the Administrator is authorized to regulate any fuel or

fuel additive "if in the judgment of the Administrator any emission product of such fuel or fuel

additive causes, or contributes, to air pollution which may reasonably be anticipated

to endanger

the public health or welfare"). In addition, in the 1990 CAA Amendments, Congress added

several additional provisions that require findings that bear some similarity to the findings

discussed above. See (1) CAA section 129(e) (Administrator or state is required to "require the

owner or operator of any unit to comply with emission limitations or implement any other

measures, if the Administrator or the state determines that emissions in the absence of such

limitations or measures may reasonably be anticipated to endanger public health or the

environment"); (2) CAA section 183(f)(l)(A) (Administrator is required to promulgate standards

for VOC and any other air pollutant from loading and unloading of tank vessels "which the

Administrator finds causes, or contributes to, air pollution that may be reasonably anticipated to

endanger public health or welfare"); (3) CAA section 213(a)(1)-(3) (Administrator is required to

(i) conduct a study to determine if emissions from nonroad engines and nonroad vehicles "cause,

or significantly contribute to, air pollution which may reasonably be anticipated to endanger

public health or welfare;" (ii) determine whether emissions of certain pollutants from new and

existing nonroad engines and vehicles "are significant contributors to ozone or carbon monoxide

concentrations in more than 1 area which has failed to attain the national ambient air quality

standards (NAAQS) for ozone or carbon monoxide;" and if so, (iii) promulgate regulations

containing standards applicable to such emissions from those classes or categories of new

nonroad engines and new nonroad vehicles "which in the Administrator's judgment cause, or

contribute to, such air pollution") (CAA section 213(a)(4), which concerns different pollutants

Other provisions Congress added into CAA section 111 during the 1977 CAA

Amendments might also shed light on the meaning of the SCF provision. Congress was

dissatisfied at what it perceived to be the slow pace of the EPA' s regulation under CAA section

111, and as a result, added provisions (which have continued in effect) that required the EPA to

include on the list required under CAA section 111 (b)(1)(A) the categories of major stationary

sources not already on the list, and promulgate standards of performance for those categories on

a specified schedule. CAA section 111 (f)(l). Congress further directed the EPA to determine

priorities for promulgating standards for the listed categories by considering, among other things,

"the quantity of air pollutant emissions which each such category will emit, or will be designed

to emit," and "the extent to which each such pollutant may reasonably be anticipated to

endanger public health or welfare." CAA section 11 l(f)(2)(A)-(B) (emphasis added).75 The

emphasized text could be interpreted to indicate that Congress recognized the EPA's ability to

consider, under CAA section 111 , the impacts of specific pollutants on public health or welfare.

Further, the fact that the emphasized text is phrased in terms of "the extent to which each such

pollutant" is determined by the EPA to "endanger public health or welfare," rather than simply

"whether each such pollutant may reasonably be anticipated to endanger public health or

than under CAA section 213(a)(2)-(3), has requirements similar to the requirements of those

provisions); (4) CAA section 615 (Administrator is required to regulate "(i]f, in the

Administrator's judgment, any substance, practice, process, or activity may reasonably be

anticipated to affect the stratosphere, especially ozone in the stratosphere, and such effect may

reasonably be anticipated to endanger public health or welfare"). For the most part, these

provisions contemplate endangerment or cause or contribute findings, or similar determinations,

for a pollutant, emissions, or substance, and for that reason, could support interpreting CAA

section 111 (b)(1)(A) to require a pollutant-specific SCF.

75 In the 1990 CAA Amendments, Congress revised the provisions of CAA section 11 l(f)(l)

directing the EPA to promulgate standards for listed categories and retained the provisions of

CAA section 111 (f)(2) for prioritizing.

welfare," might be reasonably construed as indicating that Congress presupposed that, in taking

account of the "air pollutant emissions which each such category will emit, or will be designed to

emit" for the purpose of prioritizing the establishment of standards of performance for sources

within each category, the EPA would only be establishing standards of "air pollutant emissions"

that "may reasonably be anticipated to endanger."76

CAA section 122(a), also added in the 1977 CAA Amendments (and still in effect), could also shed light on the meaning of the SCF provision of CAA section 11 l(b)(l)(A). Section 122(a) of the CAA requires the Administrator "to determine whether or not emissions of radioactive pollutants .. . , cadmium, arsenic and polycyclic organic matter into the ambient air will cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health." Further, " [i]f the Administrator makes an affirmative determination with respect to any such substance," the Administrator is required, depending on the substance, to include it on the list published under CAA section 108 or 112, "or shall include each category of stationary sources emitting such substance in significant amounts in the list published under section l l l(b)(l)(A) .... " CAA section 122(a) (emphasis added). Here, too, the emphasized provisions could be interpreted to indicate that Congress expected the EPA to make pollutant-specific determinations under CAA section 111 (b).

In addition, the EPA' s interpretation of the cause or contribute finding required under CAA section 202(a) could serve as a precedent for interpreting CAA section 11 l(b)(l)(A) as requiring a pollutant-specific SCF. CAA section 202(a)(l), as revised by the 1977 CAA

76 It is perhaps significant, too, that Congress in CAA section 111 (f)(2) tied the finding of "endangerment" not to "air pollution" that endangers, as is the case with respect to every section of the CAA where the concept of "cause or contribute to" is employed but, rather, to "each such pollutant." This particular formulation is used nowhere else in the CAA and arguably suggests that Congress had a pollutant-specific SCF in mind.

Amendments, provides, in relevant part: "The Administrator shall by regulation prescribe ... standards applicable to the emission of any air pollutant from any class or classes of new motor vehicles or new motor vehicle engines, which in his judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare") (emphasis added). 42 U.S.C. 7521(a)(l) (1977). The emphasized term, "cause, or contribute," is plural, which could suggest that it refers to "any class or classes of new motor vehicles or new motor

vehicle engines," and thereby contemplates that the cause or contribute finding would be made

based on the emissions, considered all together, from the source category, not on the basis of

individual pollutants. However, the EPA has interpreted this provision to instruct the

Administrator to make the cause or contribute finding on a pollutant-specific basis. See 74 FR

66496, 66506 (2009 Endangerment Finding). The EPA's interpretation of CAA section 202(a) to

contemplate a pollutant-specific finding could support the reasonableness of interpreting CAA

section 11 l(b)(l)(A) to contemplate the same thing.

In fact, it appears to be the case that the EPA in the past did so interpret CAA section

111 (b)(1)(A) to require a pollutant-specific SCF as a prerequisite for regulating that pollutant. In

the first guideline document the EPA issued under CAA section 111 (d) (i.e., for emissions from

existing phosphate fertilizer plants), the EPA summarized CAA section 11 l(b)(l)(A) (as it read

prior to revision in the 1977 CAA Amendments) as follows:

The Administrator first considers potential health and welfare effects of a

designated pollutant in connection with the establishment of standards of

performance for new sources of that pollutant under section 11 l(b) of the Act.

Before such standards may be established, the Administrator must find that the

pollutant in question "may contribute significantly to air pollution which causes or

contributes to the endangerment of public health or welfare" [see section

I I I (b)(l)(A)]. Because this finding is, in effect, a prerequisite to the same pollutant

being identified as a designated pollutant under section I I I (d), all designated

pollutants will have been found to have potential adverse effects on public health,

public welfare, or both.

"Final Guideline Document: Control of Fluoride Emissions from Existing Phosphate Fertilizer

Plants ," U.S. Environmental Protection Agency, EPA-450/2-77-005 (March 1977) at 2-1

(emphasis added). The emphasized statements reflect a straight-forward interpretation of CAA

section 11 l(b) as requiring a pollutant-specific SCF as a pre-requisite to promulgating an NSPS

for that pollutant. This very same language appears in each of the three guideline documents that

the EPA subsequently issued pursuant to CAA section 111 (d). 77 Although these statements from

the EPA stand in contrast to later EPA statements that characterize CAA section 111 (b) as

requiring that the SCF be made on the basis of the source category, they suggest uncertainty as to

whether CAA section 11 l(b)(l)(A) should not be read to require a SCF for specific pollutants.78

77 See "Final Guideline Document: Control of Sulfuric Acid Mist from Existing Sulfuric Acid

Production Units," U.S. Environmental Protection Agency, EPA-450/2-77-0019 (September

1977) at 5-1; "Control ofTRS Emissions from Existing Mills," U.S. EPA, EPA-450/2-78-003b

(March 1979) at 2-1 ; "Primary Aluminum: Guidelines for Control of Flouride Emissions from

Existing Primary Aluminum Plants," U.S. EPA, EPA-450/2-78-049b (December 1979) at 2-1.

Similarly, in its rulemaking establishing the regulatory process for emissions from existing

sources under CAA section 111 (d), which preceded the development of these guideline

documents, the EPA had stated:

[S]ection 111 (d) requires control of existing sources of a pollutant if a

standard of performance is established for new sources under section

11 l(b) and the pollutant is not controlled under sections 108-110 or 112.

In general, this means that control under section 111 (d) is appropriate

when the pollutant may cause or contribute to endangerment of public

health or welfare but is not known to be "hazardous" within the meaning

ofsection 112 and is not controlled under sections 108-110 ....

"State Plans for the Control of Certain Pollutants from Existing Facilities," 40 FR 53340

(November 17, 1975) (emphasis added).

78 In another EPA document issued some 18 months after promulgation of the first set of

standards of performance (for five source categories) in December 1971 , the EPA provided a

summary of the second group of standards (for a further seven source categories) for which

rulemaking had then been initiated. In providing at the outset of that document what it called a

"synopsis" of CAA section 111 , the EPA stated that the "Section provides that, for purposes of

establishing such standards, the Administrator may distinguish between types, sizes, and classes

In light of the considerations described above, the EPA solicits comment on whether

CAA section 111 (b)(1)(A) should be interpreted to require it to make a pollutant-specific SCF as

a prerequisite for promulgating an NSPS for that pollutant. CAA section 111 (b)(1)(A)'s SCF

provision, when read in isolation, may appear to require a SCF for the source category as a

prerequisite for listing the source category. However, should the EPA instead conclude that

Congress could not have intended that the EPA promulgate NSPS without a pollutant-specific

SCF in light of, among other considerations, (1) the fact that Congress adopted at the same time

and subsequently amended at the same time similarly phrased CAA provisions that do

contemplate a pollutant-specific finding prior to regulation, (2) the inherent vagueness of the

rational basis approach, and (3) the indications in the iegislative history that Congress did intend

that the EPA make a pollutant-specific SCF under CAA section 111?

It should be noted that requiring a pollutant-specific SCF need not result in duplicative

SCFs (or duplicative associated endangerment findings), that is, the EPA would not need to

make separate SCFs (and associated endangerment findings) for both the source category and

each pollutant emitted by the source category that the EPA seeks to regulate. Rather, in

beginning to regulate pollutants from a previously unlisted source category, the EPA could

identify any pollutant it seeks to regulate and, if appropriate, make a SCF (and associated

endangerment finding) for that pollutant as emitted by that source category. Such a SCF would

serve as the "cause[], or contribute[] significantly to" finding both for listing the source category

and for promulgating an NSPS for the pollutant.

of sources; and that standards can be established for any pollutant that contributes to the

endangerment of health and welfare." See Group II New Source Performance Standards, EPA

Doc. 450S7001 (January 1973) (emphasis added).

The EPA recognizes it has proceeded under the implicit assumption that CAA section

111 (b)(l)(A) does not require a pollutant-specific SCF through many NSPS rulemakings over a

lengthy period. The EPA solicits comment on what the implications would be to the CAA

section 111 program, including the current NSPS and CAA section 111 (d) guideline documents

and state plans, of interpreting CAA section 11 l(b)(l)(A) to require a pollutant-specific SCF. In

this regard, the EPA notes that, for the most part, its past practice has been to list a source

category and to propose NSPS for pollutants from the source category at the same time as, or

shortly after the listing, and to finalize the NSPS shortly after that. It seems

evident that those

NSPS concerned pollutants that the EPA considered in listing the source category. The EPA

solicits comment on whether, under those circumstances, the EPA could be considered to have

made SCFs and endangerment findings for those pollutants, so that it would not be necessary to

make those findings now. However, in some cases, the EPA promulgated NSPS for air pollutants

that the EPA did not address in listing the source category or in the initial set of regulations

promulgated at the same time, or shortly after, the EPA listed the source category. For example,

the EGU CO2 NSPS and the 2016 NSPS 0000a rules addressed GHG pollutants that the EPA

had not identified in the initial SCF it made for those source categories or in the rulemakings

promulgating the initial NSPS for those source categories. The EPA solicits comment

specifically on whether the considerations noted above indicate that CAA section 11 l(b)(1)(A)

should be interpreted to require a pollutant-specific SCF as a prerequisite for promulgating an

NSPS for a pollutant that the EPA did not identify when it made the initial source-category SCF

or promulgated the initial regulations for the source category. In addition, the EPA solicits

comment on whether, if CAA section 111 (b)(1)(A) is interpreted to be ambiguous as to whether

it requires a pollutant-specific SCF, the EPA could decide that it needs to make the SCF and

associated endangerment findings for pollutants that, like GHG, it did not address when it listed

the source category or shortly thereafter, but that it does not need to make those findings for

pollutants that it did address at that time. Furthermore, the EPA solicits comment on whether, in

light of the fact that CAA section 111 (b)(1)(A) explicitly phrases the requisite finding in terms of

"causes, or contributes significantly to, air pollution [that meets the endangerment criteria]"

(emphasis added), there is any basis for interpreting the provision to require the EPA to make

only a "cause or contribute" finding, of the type required under, for example, CAA section

202(a).

B. Significant Contribution Finding in 2016 NSPS 0000a Rule

The EPA also solicits comment on whether, assuming it is required to make a SCF for

methane emissions from the Oil and Natural Gas source category as a prerequisite to promulgating an NSPS for methane, the SCF it made in the 2016 NSPS 0000a rule was an appropriate methane-specific finding. 79 At the outset, it should be noted that that SCF concerned emissions from the production, processing, transmission, and storage segments of the oil and natural gas industry. 81 FR 35841-43. In this proposed rulemaking, the EPA proposes to eliminate the transmission and storage segment from the source category. Accordingly, the appropriate SCF for methane from this source category would be limited to methane emissions from production and processing sources. The EPA solicits comment on whether the SCF in the 2016 NSPS 0000a rule can be considered appropriate in light of the fact that it was based on a greater amount of emissions than are in the source category as proposed in this rulemaking.

79 As noted in section VI.A. above, in the 2016 NSPS 0000a rule, the air pollutant for which the EPA made the SCF was GHG, but because methane constitutes most of the GHG emitted from the Oil and Natural Gas source category, the EPA generally refers to methane as the subject of the SCF.

In addition, we solicit comment on the question whether the SCF in the 2016 NSPS 0000a rule can be considered appropriate given that nowhere in the course of developing and promulgating that rule did the EPA set forth the standard by which the "significance" of the contribution of the methane emissions from the source category (as revised) was to be assessed.80 Specifically, we ask for comment on whether, as a matter oflaw, under CAA section 111, the EPA is obligated to identify the standard by which it determines whether a source category's emissions "contribute significantly," and whether, if not so obligated, the EPA nevertheless fails to engaged in reasoned decision-making by not identifying that standard. Cf Motor Vehicle Mfrs. Assn. of United States, Inc. v. State Farm Mut. Automobile Ins. Co., 463 U.S. 29, 43 (1983) ("Normally, an agency rule would be arbitrary and capricious if the agency has ... entirely failed to consider an important aspect of the problem.").

C. Criteria for Making a Significant Contribution Finding Under CAA Section 111

The EPA also solicits comments on the appropriate criteria for it to use when determining

whether a pollutant emitted from a source category significantly contributes to air pollution

which may reasonably be anticipated to endanger in the context of CAA section 111. The EPA

does not intend for these comments to inform the finalization of this rule, but rather to inform the

EPA's actions in future rules. Furthermore, the EPA is not asking for comment on the factors the

Agency should consider in determining whether air pollution may reasonably be anticipated to

endanger public health or welfare, but rather the factors that should be considered when

80 In the 2016 NSPS 0000a rule, the EPA averred that the "collective GHG emissions from the

oil and natural gas source category are significant, whether the comparison is domestic . . . global

.. . , or when both the domestic and global GHG emissions comparisons are viewed in

combination," basing its position on data showing that the source category accounts for 32

percent of United States methane emissions, 3.4 percent of total United States GHG emissions,

and 0.5 percent of all global GHG emissions." See 81 FR 35840.

determining under CAA section 111 whether a pollutant from a source category significantly

contributes to that air pollution.

In subsection 1 of this section, the EPA discusses other contexts under the CAA in which

it has interpreted and applied similar language to that governing the SCF determinations under

CAA section 111 (b)(1)(A). In subsection 2, the EPA identifies and solicits comment on specific

elements of criteria that might govern SCF determinations. In subsection 3 of this section, the

EPA provides background information concerning methane and GHG emissions that may be

relevant for application of those criteria to those particular pollutants.

1. Legal Background for Selection of Criteria for Significant Contribution Finding

The phrase "contributes significantly" and the included terms "contributes" and

"significantly" are not defined in any provision of the CAA or in EPA regulations. Accordingly,

the EPA has substantial discretion in interpreting these terms and should receive deference for a

reasonable interpretation of the provision. The U.S. Supreme Court, in EPA v. EME Homer City

Generation, L.P. , 572 U.S. 489 (2014), recognized that a similar provision in CAA section

110(a)(2)(D)(i), often termed the "good neighbor" provision, is ambiguous and approved

the

EPA's interpretation. 81

The good neighbor provision requires states to prohibit emissions "in amounts which will

contribute significantly to nonattainment" of the NAAQS in any other state. For regional

81 In an earlier case concerning the good neighbor provision, the D.C. Circuit noted that the term

"significant" is ambiguous and may be subject to different meanings in different contexts.

Michigan v. EPA, 213 F.3d 663 , 677 (D.C. Cir. 2000). The D.C. Circuit has also observed that

the term "contribute" is ambiguous. Catawba County, NC v. EPA , 571 F3d 20, 38-39 (D.C. Cir.

2009). There, the Court interpreted the requirement under CAA section 107(d) that the EPA

designate an area nonattainment if it does not meet the NAAQS or "contributes to ambient air

quality in a nearby area that does not meet" the NAAQS. The Court concluded that the EPA has

discretion in devising criteria or factors in determining the amount of emissions that it considers

"contribute."

pollutants like ozone and fine PM, where downwind air quality problems are caused by the

collective contribution of numerous upwind sources across multiple states, the EPA has

considered a variety of factors when determining whether sources in a particular state will

"contribute significantly" under this statutory provision. The EPA has typically first used an air

quality threshold to identify upwind states that contribute to and are, therefore, "linked" to a

downwind air quality problem. See, e.g., Cross-State Air Pollution Rule (CSAPR), 76 FR 48208,

48236 (August 8, 2011) (upwind states with impacts in a downwind area that meet or exceed 1

percent of the 1997 ozone, 1997 PM with a diameter of 2.5 micrometers or less (PM2.s), and

2006 PM2.s NAAQS are considered linked to downwind air quality problems); CSAPR Update,

81 FR 74504, 74518 (October 26, 2016) (applying threshold equivalent to 1 percent of the 2008

ozone NAAQS). The EPA has then used a multi-factor test considering both cost and air-quality

factors to determine what portion of a linked state's contribution to an air quality problem, if any,

is considered "significant" and, thus should be prohibited under the good neighbor provision. See

CSAPR, 76 FR 48248-249; CSAPR Update, 81 FR 74519. In EME Homer City Generation, the

Supreme Court affirmed the EPA' s approach of apportioning emission reduction responsibility

based on which states can eliminate emissions most cost-effectively. 572 U.S. at 519 (explaining

that " [e]liminating those amounts that can cost-effectively be reduced is an efficient and

equitable solution to the allocation problem the Good Neighbor Provision compels the Agency to

address."). 82

82 The good neighbor provision also instructs states to prohibit emissions which will "interfere

with maintenance" of the NAAQS in downwind states, and the Supreme Court affirmed that this

provision "entails a delegation of administrative authority of the same character as" the

"contribute significantly" clause. EME Homer City Generation, 572 U.S. at 515 n.18. The EPA

has, therefore, used the same two-step approach to identifying and apportioning emission

reduction responsibility among upwind states linked to downwind areas that struggle to maintain

theNAAQS.

The EPA has also considered the meaning of "contributes significantly" as it appears in

CAA section 189(e). This provision requires that the control requirements applicable to major

stationary sources of PM with a diameter of 10 micrometers or less (PM10) also apply to major

stationary sources of PM10 precursors, "except where the Administrator determines that such

sources [of precursors] do not contribute significantly to PM10 levels which exceed the standard

in the area." Consistent with the D.C. Circuit's decision in NRDC v. EPA, 706 F.3d 428 (D.C.

Cir. 2013), this provision also applies to the regulation of sources of PM2.sprecursors in

designated PM2.s nonattainment areas.

The EPA has interpreted and applied CAA section 189(e) in its recent PM2.s- state

implementation plan (SIP) regulations, "Fine Particulate Matter National Ambient Air Quality

Standards: State Implementation Plan Requirements; Final Rule," 81 FR 58010 (August 24,

2016) (PM2.s SIP Requirements Rule); and provided additional information in a recent draft

guidance document. U.S. EPA, Office of Air Quality Planning and Standards, "PM2.s Precursor

Demonstration Guidance," EP A-454/R-19-004 (May 2019) (PM2.s Precursor Guidance). The

EPA noted that, although the phrase "contribute significantly" and its included terms, "contribute" and "significantly," are ambiguous, Congress has provided some direction regarding the degree of contribution required by modifying the term "contribute" with the term "significantly." This indicates that Congress intended that, in order to be subject to regulation, the emissions must have a greater impact than a simple contribution not characterized as "significant[]." However, Congress did not quantify how much greater. Therefore, the EPA developed criteria for identifying whether the impact of a particular precursor would "contribute significantly" to a NAAQS exceedance. Id. at 10-13. First, the EPA identified concentration values, based on the amount of observed variability of ambient air quality levels, which would be

used to determine whether a precursor "contributes" in a state's analysis. The EPA specified numerical thresholds for the annual PM2.s NAAQS (0.2 microgram per cubic meter (µg!m3)) and 24-hour PM2.s NAAQS (1.5 µg/m3) , so that any impact less than those amounts is considered insignificant. Id. at 17.

However, the EPA added that if the estimated air quality impact of precursor emissions exceeds the applicable threshold, that does not necessarily mean that the precursors' contribution to those levels is "significant(]." Rather, "the significance of a precursor's contribution is to be determined 'based on the facts and circumstances of the area."' Id. at 18, (quotation is found in 40 CFR 51.1006(a) (various provisions) (the PM2.s SIP Requirements Rule). The guidance goes on to list factors that may be relevant, including among others, the amount by which a precursor's impact exceeds the recommended contribution threshold, the sources of PM2.s, trends in precursor emissions, and the extent of the PM2.s air pollution problem in a particular area.

PM2.s Precursor Guidance at 18.

In addition, we note that the EPA has previously made significance determinations in the context of section 213 of the CAA, related to certain stages of decisions regarding regulation of new nonroad engines and vehicles. CAA section 213 is the only provision of the CAA, apart from CAA section 11 l(b)(l), where Congress employed the modifier "significantly" in

connection with language directing the Administrator to determine if air pollutant emissions

from new and existing (in the case of emissions of CO, NOx, and VOCs) nonroad engines and

vehicles in the aggregate "contribute" to "air pollution which may reasonably be anticipated to

endanger public health or welfare," in CAA sections 213(a)(1), (2) and (4), before then directing

and authorizing the EPA to promulgate standards applicable to classes and categories of just new

nonroad engines and vehicles that emit pollutants contributing (without employing a

"significance" modifier) to such air pollution under CAA sections 213(a)(3) and (4). When the

EPA first undertook rulemaking as directed by CAA section 213, it noted that "[s]ection 213(a) .

. . provides no guidance as to what constitutes a ' significant' contribution." See 58 FR 28811

(May 17, 1993). Thus, the EPA looked to "the legislative history and the scope of the [1990

CAA Amendments], the emission contribution of nonroad engines and vehicles, and a

comparison of nonroad emissions to emissions from other regulated sources" in proposing to

find that emissions from nonroad sources were indeed "significant." Id.

In taking final action to promulgate the initial set of new nonroad engine and vehicle

standards, the EPA responded to commenters who had "argued that EPA cannot make a

significance determination without first defining a standard upon which to base that

determination." See 59 FR 31308 (June 17, 1994). The EPA did not disavow the need to justify a

finding that contributions were significant, but it did object to the commenters' apparent

assertion that a "specific numerical standard for significance must be determined prior to

considering whether nonroad emissions are significant." Id. (emphasis added). The EPA noted

that Congress in CAA section 213 "gave EPA wide discretion to determine whether the

emissions ofNOx, VOC, and CO from nonroad engines and vehicles are significant contributors

to ozone or CO concentrations," and then pointed to the qualitative assessment the EPA had

made based on the criteria it had identified in the proposed rule. Id.

Based on the reasoning of the caselaw described above and consistent with the EPA's

approach for similar CAA provisions, the EPA believes that "contributes significantly" under

CAA section 11 l(b)(l)(A) is ambiguous, but that Congress has made clear that in order to be

subject to regulation, the emissions must have a greater impact than a simple contribution. It is

within the Agency's discretion to identify additional qualitative or quantitative criteria or factors

- ones that are related to the nature of the air pollutant, the source category, and the air pollution

problem at issue - to determine whether a contribution is 'significant," as long as the Agency

provides a reasoned basis to justify using such additional criteria or factors. 83 The EPA solicits

comment on whether the examples discussed above, in which the EPA has construed and applied

statutory language similar to the term "contributes significantly" in CAA section 111 (b)(1)(A), 84

suggest factors that it may be appropriate for the EPA to consider when construing and applying

that term in the context of CAA section 111 , including, but not limited to, whether the

consideration of cost-effectiveness in the interstate transport context may suggest that the EPA

should or has discretion to consider whether CAA section 11 l(b) provides a cost-effective basis

to assess a source category's contribution to a particular air-pollution problem as part of the

EPA' s determination whether that source category significantly contributes to that air pollution

problem.

2. Elements of Criteria for Significant Contribution Finding Under CAA Section 111

First, the EPA solicits comment on what information the Agency should consider when

quantifying the emissions of the pollutant in question from the source category. In section

VI.C.3 , we detail the historical, current, and projected methane emissions from various source

categories. To what extent should the SCF rely primarily on the most recent emission

inventories, and to what extent should historical trends and future projections inform the

Administrator's finding? For example, consider the case of minimal current day emissions, but

projections of rapid emission growth; or, conversely, substantial current emissions, but

projections of a rapid decline in emissions even in the absence of new rulemakings. In tum,

83 See PM2.s Precursor Guidance at 12.

84 In this solicitation of comment, the EPA is not soliciting comment on, or re-opening, any

aspect of the rulemakings that contained those examples.

should the SCF evaluate the significant contribution of new sources potentially subject to

regulation under CAA section 11 l(b) as well as existing sources potentially subject to

subsequent regulation under CAA section 111 (d)?85 Similarly, for a source category in which

new sources are not expected in the future, should the Administrator independently evaluate

significant contribution from existing sources? Finally, in the case of the 2016 NSPS 0000a

rule, should the EPA consider only methane emissions or also account for CO2 emissions and

any other GHG that may be emitted from the source category?

Second, the EPA is soliciting comment on the total universe of emissions to which the

emission of the pollutant in question from the source category in question should be compared. If

the source category emits primarily a single gas (e.g., methane), should the emissions from that

source category be compared against methane emissions (see Table 7, column 3 of this

preamble) or against all GHG emissions (see Table 7, column 4 of this preamble)? How should

natural emissions be considered in this comparison (see VI.C.3.a.i of this preamble)? Should the

comparison be to domestic emissions (see Table 7 of this preamble) or to global emissions (see

Table 8 of this preamble)? Or should multiple comparisons be made, as in VI.C.3 of this

preamble? In making a SCF, should the Administrator evaluate the efficacy of regulation for new

and/or existing sources? The EPA also welcomes comment on appropriate and well-vetted

sources to use for domestic, global, and natural emissions.

Third, the EPA is soliciting comment on whether the Administrator should determine a

threshold for significant contribution under CAA section 11 l(b)(l)(A) (above which, the

85 To date, the EPA has evaluated the emissions from the source category, which includes

existing sources, in making the SCF determination, and the D.C. Circuit has upheld that industrywide

approach. See Nat'! Lime Ass'n v. EPA, 627 F.2d 416,433 n.48 (D.C. Cir. 1980); Nat '!

Asphalt Pavement Ass'n v. Train, 539 F.2d 775, 779-82 (D.C. Cir. 1976).

emissions of the pollutant from the source category would be determined to significantly

contribute, and below which, they would not), and which factors the Administrator should

consider in determining that threshold. Is there a simple percentage criterion that holds across

pollutants and source categories (i. e., a source category responsible for X percent of any

pollutant is deemed to "significantly contribute" to the air pollution caused by that pollutant), or

would it depend on, for example, the number of source categories that emit that pollutant (and

the relative emissions from the source category whose emissions are the subject of the SCF

determination in question, as compared to emissions from those other source categories); the

nature of the pollutant; and/or the nature of the air pollution to which that pollutant may

contribute (i.e., should the EPA address the question whether emissions of criteria and other

traditional air pollutants, which cause air pollution primarily due to direct exposure, ambient

regional concentration, and/or intermediate-range transport, "significantly contribute" to air

pollution in a different manner than it should address the question whether emissions of GHG

"significantly contribute" to climate change)?

Finally, the EPA is soliciting comment on the implications of the fact that methane in the

atmosphere serves as a precursor to tropospheric ozone, as noted in previous EPA rules (see 81

FR 35837). Are there legal implications resulting from this contribution of methane to a criteria

pollutant? For example, as discussed above, the EPA is proposing that the regulation ofVOC

from new sources under CAA section 111 (a) does not trigger the application of CAA section

11 l(d) to existing sources in the same source category because VOC are a precursor to

tropospheric ozone. 86 Does the fact that methane is also a precursor to ozone indicate that

86 It is worth noting that while EPA has excluded methane and some related pollutants from the

definition of voe, methane is chemically a voe.

regulation of methane from new sources under CAA section 111 (b) would not trigger the

application of CAA section 111 (d) to existing sources in the same source category for the same

reason? If EPA is precluded from regulating existing sources of a pollutant under CAA section

111 (d), should that factor be evaluated in a SCF? What considerations are relevant for pollutants

that contribute to multiple different kinds of pollution (methane as both a GHG and an ozone

precursor, CO2 as both a GHG and a contributor to ocean acidification, NOx as a

precursor to

both PM2.s and ozone)? In this regard, the EPA notes that the definition of "air pollutant" at CAA

section 302(g) provides that the term "includes -any precursors to the formation of any air

pollutant, to the extent the Administrator has identified such precursor or precursors for the

particular purpose for which the term ' air pollutant' is used."

The Agency welcomes comments on any and all aspects of these questions.

3. Background Concerning Methane and GHG Emissions

a. Methane Emissions

i. Natural and anthropogenic emissions of methane. Methane is emitted from a variety of

natural and anthropogenic sources and activities. Globally, it is estimated that around 60 percent

of methane emissions are from anthropogenic activities, and 40 percent are from natural

activities (Saunois et al., 2016). Anthropogenic sources include natural gas and petroleum

systems, enteric fermentation, solid waste disposal, coal mining, and other sources. Natural

sources include wetlands, natural biomass burning, geologic seepage, termites, oceans, and

permafrost.

In a 2018 report, the National Academy of Sciences noted a number of complex factors

related to methane that may be relevant to a pollutant-specific SCF for domestic oil and natural

gas production, processing, transmission, or storage:

"Methane comes from numerous anthropogenic activities and natural processes (Figure

1.3), and notabl y, there is no single dominant source, but rather many significant sources.

This configuration of sources forces a broader view of emissions for this gas, as opposed

to many other significant GHGs whose anthropogenic sources tend to be dominated by a

single source type such as from the combustion of fossil fuel."

"The U.S. methane budget (emissions and removal processes) cannot be considered in

isolation from the global methane budget because U.S. emissions account for only about

one-tenth of global emissions. Consequently, atmospheric methane abundance over the

United States is significantly influenced by sources located outside of the United States,

even though there may be large responses due to strong local emissions. The atmospheric

residence time for methane is about a decade; hence emitted methane is redistributed

globally, and methane emissions from the United States influence global concentrations."

"About 60 percent of total global methane emissions are thought to be from

anthropogenic sources and about 40 percent from natural sources (Saunois et al., 2016).

Anthropogenic sources encompass a wide range of human activities, including food and

energy production and waste disposal. Livestock (through fermentation processes in their

digestive system that generate methane and manure management), rice cultivation,

landfills, and sewage account for 55-57 percent of global anthropogenic emissions.

Emissions from production of fossil fuels, including petroleum, natural gas, and coal, are

estimated to account for 32-34 percent (Saunois et al., 2016), with the remainder from

biomass, biofuel burning, and minor industrial processes. "87

Global atmospheric methane concentrations have increased by about 164 percent since

1750, from a pre-industrial value of about 700 parts per billion (ppb) to 1,849 ppb in 2017

(National Oceanic and Atmospheric Administration (NOAA)/Earth System Research Laboratory

(ESRL), 2018).

In section III.A.2.a, Table 2 presents total U.S. anthropogenic methane emissions for the

years 1990, 2008, and 2017. In the U.S., the largest anthropogenic sources of methane are natural

gas and petroleum systems, enteric fermentation, and landfills. Methane emissions are 10 percent

of total U.S. GHG emissions in CO2 equivelent. Methane emissions have decreased by 15

percent since 1990, and by 7 percent since 2008. Table 3 above presents total methane emissions

87 Improving Characterization of Anthropogenic Methane Emissions in the United States (2018),

https:llwww. nap. edu/read/24987/chapter/3#26.

from natural gas and petroleum systems, and the associated segments of the sector, for years

1990, 2008, and 2017, in MMT CO2 Eq.

ii. Trends. As seen in Figure 1, methane emissions from the oil and natural gas

production, natural gas processing, and natural gas transmission and storage segments together

decreased by 2 percent between 2008 and 201 7. Methane emissions from the production and

processing segments together decreased by 3 percent over the same time period, while methane

emissions from transmission and storage increased by 1 percent. These trends also took place

during periods of substantial increases in oil and natural gas production.

Methane Emissions, MMT CO2 Eq

200

150

FIGURE 1. METHANE EMISSIONS FROM THE INVENTORY OF U.S. GREENHOUSE GAS EMISSIONS AND SINKS: 2008-2017 (PUBLISHED APRIL 11, 2019)

Oil and natural gas production segment trends are impacted by decreases in oil and natural gas exploration emissions (91 percent from 2008 to 2017), primarily due to decreases in hydraulically fractured well completions without RECs and a decrease in the number of well completions. Production emissions outside of the exploration subcategory increased by 8 percent over the time frame, primarily due to increased emissions from gathering and boosting stations.

In the processing segment, emissions increased by 9 percent over the time period, due primarily

to an increase in emissions from compressor engine exhaust, caused by an increase in engine capacity per plant. Over the same time frame, oil production increased 35 percent and natural gas production increased 87 percent.

The increase in methane emissions in the transmission and storage segment from 2008-2017 was driven by an increase in emissions from compressor engine exhaust and station venting. Over the same time frame, natural gas consumption increased by 16 percent.

iii. Projections. According to the latest Energy Information Administration (EIA) Annual Energy Outlook report, 88 from 2017 to 2050, dry natural gas and crude oil and lease condensate production (which impact the production and processing segments emissions) are projected to increase by 60 percent and 26 percent, respectively,' while natural gas consumption (which impacts transmission and storage emissions) is projected to grow by 29 percent.

b. U.S. oil and natural gas production and natural gas processing and transmission and storage GHG emissions relative to total U.S. GHG emissions. 89 Relying on data from the U.S. GHGI, we compared U.S.: (1) oil and natural gas production and natural gas processing and transmission GHG emissions, (2) oil and natural gas processing GHG emissions; and (3) transmission

and

storage GHG emissions to total U.S. GHG emissions as an indication of the role these segments

play in the total domestic contribution to the air pollution that is causing climate change. In 2017,

total U.S. GHG emissions from all sources were 6,472 MMT CO2 Eq.

TABLE 7. COMPARISONS OF U.S. OIL AND NATURAL GAS EMISSIONS TO

TOTAL UNITED STATES GHG EMISSIONS

88 https://www.eia.gov/outlookslaeo/data/browser/#/?id= 1-

AE02019&cases=rej2019&sourcekey=O. Reference scenario. Accessed April 12, 2019.

89 The U.S. and global figures in this subsection refer to anthropogenic emissions.

2017 CH4 Share of Total Share of Total

Emissions U.S. CH4 U.S.GHG

(MMT CO2 Eq) (%) (%)

U.S. Oil & Gas Production and

Natural Gas Processing &

Transmission and Storage

190 29 3

U.S. Oil & Gas Production and

Natural Gas Processing

158 24 2

U.S. Gas Transmission and

Storage 32 5 1

Emissions from the Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2017

(published April 11, 2019), calculated using methane (CH4) GWP of 25.

c. US. oil and natural gas production and natural gas processing and transmission and storage

GHG emissions relative to total global GHG emissions. For additional background information

and context, we used 2014 emissions data from the World Resources Institute (WRI) to make

comparisons between U.S. oil and natural gas production and natural gas processing and

transmission and storage (and subsets thereof) emissions and the emissions inventories of entire

countries and regions.

TABLE 8. COMPARISONS OF UNITED STATES OIL AND NATURAL GAS

EMISSIONS TO TOTAL GLOBAL GHG EMISSIONS

2014 CH4 Share of Global Share of Global

Emissions (MMT CH4 GHG

CO2 Eq) (%) (%)

U.S. Oil & Gas Production

and Natural Gas Processing &

Transmission and Storage

194 2.1 0.4

U.S. Oil & Gas Production

and Natural Gas Processing

162 1.8 0.3

U.S. Gas Transmission and

Storage 32 0.4 0.1

Emissions from the Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2017

(published April 11, 2019), calculated using CH4 GWP of 25. Note: Totals may not sum due to

rounding.

Recent trends in global GHG emissions suggest that the proportion of U.S. methane emissions,

including emissions from oil and natural gas production, processing, transmission, and storage, is

likely to represent a smaller share in the future.

VII. Implications for Regulation of Existing Sources

The EPA recognizes that by rescinding the applicability of the NSPS, issued under CAA

section 111 (b), to methane emissions for the sources in the Crude Oil and Natural Gas

Production source category that are currently covered by the NSPS, existing sources of the same

type in the source category will not be subject to regulation under CAA section 111 (d). The EPA

discusses the implications of this and other relevant issues below. In subsection A below, we

explain our legal interpretation of CAA section 111 (d)(l) and propose that promulgating an

NSPS for VOC emissions from new sources in the Crude Oil and Natural Gas Production source

category under CAA section 111 (b) does not trigger the application of CAA section 111 (d)

existing sources in the source category. In subsection B below, we explain why the lack of

regulation of existing sources under CAA section 111 (d) will not mean a substantial amount of

lost emission reductions. That is because we expect that many existing sources will retire or

become subject to regulation w1der CAA section 1 11 (b) because they will w1dertake

modification or reconstruction. In addition, existing sources already have market incentives to

reduce methane emissions, participate in voluntary programs to do so, and in many cases are

subject to state requirements to do so.

A. Existing Source Regulation Under CAA Section I I I (d)

CAA section 111 (d) authorizes the regulation of existing sources in a source category for

particular air pollutants to which a standard of performance would apply if those existing sources

were new sources. By legal operation of the terms of CAA section 111 (d), certain existing

sources in the Crude Oil and Natural Gas Production source category will no longer be subject to

regulation under CAA section 11 l(d) as a result of this proposed rule. Under CAA section

11 I(d)(l)(A), CAA section 11 l(d) applies only to air pollutants for which air quality criteria

have not been issued, which are not on the EPA' s list of air pollutants issued under CAA section

108(a) (generally, the list of air pollutants subject to the NAAQS, and which are not HAP

emitted from a source category regulated under CAA section 112. See 42 U.S.C. 741 l(d)(l)(A)

(CAA section 11 l(d) applies to "any air pollutant (i) for which air quality criteria have not been

issued or which is not included on a list published under section 7408(a) of this title or emitted

from a source category which is regulated under section 7412 of this title"). As noted above,

sources in the Crude Oil and Natural Gas Production source category emit VOC, methane, and

HAP. The CAA section 112 exclusion in CAA section 11 l(d)(l)(A) eliminates HAP from the

type of air pollutant that, if subjected to a standard of performance for new sources, would

trigger the application of CAA section 111 (d). In addition, as discussed below, the EPA proposes

that VOC do not qualify as the type of air pollutant that, if subjected to a standard of

performance for new sources, would trigger the application of CAA section 111 (d). On the other

hand, the EPA has, to date, assumed that methane, if subjected to a standard of performance for

new sources, would trigger the application of CAA section 111 (d). Accordingly, given this

assumption, the EPA recognizes that rescinding the applicability of the NSPS to methane

emissions for the sources in the Crude Oil and Natural Gas Production source category that are

currently covered by the NSPS will mean that existing sources of the same type in the

source

category will not be subject to regulation under CAA section 111 (d). This is a legal consequence

that results from the application of the CAA section 111 requirements.

Further, VOC do not qualify as the type of air pollutant that, if subjected to a standard of

performance for new sources, would trigger the application of CAA section 111 (d). As noted

above, the pollutants excluded from regulation under CAA section 11 l(d) include pollutants

which have been included on the EPA's CAA section 108(a) list. VOC are not expressly listed

on the EPA's section CAA section 108(a) list, but they are precursors to ozone and PM, both of

which are listed CAA section 108(a) pollutants. The definition of "air pollutant" in CAA section

302(g) expressly provides that the term "air pollutant" includes precursors to the formation of an

air pollutant "to the extent that the Administrator has identified such precursor or precursors for

the particular purpose for which the term ' air pollutant' is used." Based on this "particular

purpose" phrasing, it is appropriate to identify VOC as a listed CAA section 108(a) pollutant for

the particular purpose of applying the CAA section 108(a) exclusion in CAA section 111 (d) for

the following reasons: first, VOC are regulated under the CAA's NAAQS/ SIP program as a

result of the listing of ozone and PM on the CAA section 108(a) list, because VOC are

precursors to those two listed pollutants. Indeed, ozone levels in the ambient air are the result of

photochemical reactions of precursors (VOC and NOx), as opposed to being directly emitted

from sources. Accordingly, the statutory provisions directed at attaining the NAAQS for ozone

explicitly direct the control of VOC and emissions controls that result from the listing of ozone

under CAA section 108(a) apply to the precursors of ozone, such a VOC. See, e.g., CAA sections

182(b)(1), 182(b)(2), 182(c)(2)(B). Similarly, the EPA has recognized that " [i]n most areas of

the country, PM2.s precursors are major contributors to ambient PM2.s concentrations." 73 FR

28321 , 28325/2 (May 16, 2008). In such areas of the country, VOC are, thus, controlled for

purposes ofreducing ambient PM2.s concentrations. See, e.g. , U.S. EPA, Office of Air Quality

Planing and Standards, "Guidance on Significant Impact Levels for Ozone and Fine

Particles in

the Prevention of Significant Deterioration Permitting Program," April 17, 2018.

Second, excluding VOC from regulation under CAA section 11 l(d) makes sense within

the CAA' s three-part structure for addressing emissions from stationary sources. As the EPA has

discussed in past rulemakings, the CAA - sets out a comprehensive scheme for air pollution

control, addressing three general categories of pollutants emitted from stationary sources: (1)

criteria pollutants (which are addressed in CAA sections 108-110); (2) hazardous pollutants

(which are addressed under CAA section 112); and (3) "pollutants that are (or may be) harmful

to public health or welfare but are not or cannot be controlled under sections 108- 110 or 112."

"Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility

Generating Units: Final Rule," 80 FR 64661 , 64711 (October 23, 2015) (quoting 40 FR 53340

(November 17, 1975)). Within this three-part structure, CAA section 11 l(d) is properly

understood as a "gap-filling" measure to address pollutants that are not addressed under either

the NAAQS/SIP provisions in CAA sections 108-110 or the HAP provisions in CAA section

112. Because VOC are regulated as precursors to ozone and PM2.s under CAA sections 108-110,

they are properly excluded from regulation under CAA section 11 l(d) because the "gap-filling"

function of CAA section 111 (d) is not needed.

Third, reading the phrase "included on a list published under [CAA section 108(a)]" as

including precursors is consistent with the provision in CAA section 112(b)(2) that restricts what

pollutants may be listed as CAA section 112 HAP. CAA section 112(b)(2) provides, in pertinent

part:

No air pollutant which is listed under section 7408(a) of this title may be added to the list

under this section, except that the prohibition of this sentence shall not apply to any

pollutant which independently meets the listing criteria of this paragraph and is a

precursor to a pollutant which is listed under section 7408(a) of this title or to any

pollutant which is in a class of pollutants listed under such section.

The "except" phrasing of this sentence suggests that air pollutants which are " listed under section

7408(a)" can be read to include precursors to the pollutant that is listed under CAA section

108(a). Otherwise, pollutants that are described in the second part of the sentence (pollutants that

meet the listing criteria and are precursors to a CAA section 108(a) pollutant) would not be an

exception to the prohibition in the first part of the sentence.

Finally, the fact that precursors are not always treated as CAA section 108(a) listed

pollutants under all contexts across the CAA does not undermine the conclusion that they should

be excluded under the CAA section 108(a) exclusion in CAA section 11 l(d). As the CAA

section 302(g) definition expressly states, the scope of "air pollutant" is considered based on the

"particular purpose" for which the term "air pollutant" is used. The EPA has long recognized that

the "particular purpose" clause in CAA section 302(g) "indicates that the Administrator has

discretion to identify which pollutants should be classified as precursors for particular regulatory

purposes." 73 FR 28326/1 (May 16, 2008) ("Thus, we do not necessarily construe the Act to

require that the EPA identify a particular precursor as an air pollutant for all regulatory purposes

where it can be demonstrated that various programs under the Act address different aspects of

the air pollutant problem. Likewise, we do not interpret the Act to require that the EPA treat all

precursors of a particular pollutant the same under any one program when there is a basis to

distinguish between such precursors within that program.").

B. Limited Impact of Lack of Regulation of Existing Oil and Gas Sources under CAA Section

111 (d)

In this subsection, we explain the several reasons why the lack of regulation of existing

sources under CAA section 111 (d) will have limited environment impact.

1. Potential Applicability of 40 CFR Part 60, Subpart 0000a to Current Existing Sources

The EPA notes that the 2016 NSPS 0000a rule includes a definition and approach to

determining new source applicability that is very broad, and in the specific context of the oil and

natural gas production industry, can be anticipated to result in wide applicability of the NSPS to

existing sources due to the frequency with which such sources can be reasonably expected to

engage in "modification" activity. One consequence is the expected reduction of methane

emissions from existing sources notwithstanding the proposed alternative actions set forth here.

Further, the EPA believes that it is reasonable to expect that the number of existing sources may

decline over time due to obsolescence or to shut down and removal actions, which would mitigate the environmental impacts of lack of direct existing source regulation under CAA section 111(d), and as noted below, the EPA is soliciting comment to determine the rate at which this decline can be expected to occur.

The EPA is in the process of examining the rate of turnover of existing facilities, including the rate at which existing facilities are replaced with new facilities, are modified, or shut down. The EPA has reviewed indirect turnover information from three different sources.

First, the EPA assessed the GHGI to identify the activity counts for pneumatic controllers, compressors, tank throughput, and well completions. 90 Second, the EPA reviewed activity counts from DrillingInfo for well completions.91 Third, the EPA reviewed a number of compliance reports for the approximate first reported compliance year since the promulgation of the 2016 NSPS 0000a rule. The EPA determined that the available information may be indicative of trends for some sources whereas, for other sources, no conclusions can yet be drawn. The following section presents the information available to the EPA from which it appears possible to identify trends. We solicit information and data to help evaluate the rate at which existing sources decline over time, through modification, obsolescence, shutdown, replacement to new

90 The GHGI includes national estimates of various types of activity data, some of which correspond approximately to the 2016 NSPS 0000a facility categories. The EPA looked at the change in facilities between 2011 and 2017 in order to isolate the effect of the 2012 NSPS 0000 rule to understand turnover of affected facilities. The EPA recognizes uncertainty in this use of data from the GHGI and the EPA will need additional information to assess the identified data gaps for purposes of identifying trends.

91 The DrillingInfo database includes information on oil and natural gas wells, production, well completions, and associated data. This is relevant to potential turnover for purposes of well completion and fugitive emissions requirements. DrillingInfo records show the extent to which currently producing wells have had a completion in recent years, or the ratio of completions to

total producing wells. The EPA recognizes uncertainty in data from this source and will need

additional information to assess the identified data gaps for purposes of identifying trends.

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source status or otherwise. Specifically, we are requesting information regarding affected facility

useful life in hours or years (i.e., expected years of operation before replacement) and affected

facilities that commenced new construction, modification, or reconstruction over a time period

(e.g., 2016, 2017, and 2018). The following paragraphs present the information currently

available to the EPA by source.

a. Pneumatic controllers. The count of high-bleed pneumatic controllers in the oil and natural

gas production segment declined 74 percent from 2011 to 2017. The count oflow-bleed

pneumatic controllers also declined (by 41 percent), while intermittent-bleed increased (by 52

percent). Over the same period, the overall count of pneumatic controllers in this segment

decreased by 3 percent. This indicates that high-bleed and low-bleed controllers have been

replaced by intermittent bleed controllers. The rapid pace at which high- and low-bleed

controllers declined while intermittent-bleed controllers increased suggests that pneumatic

controllers had a high rate of turnover or were replaced before the end of their useful life. This

data shows a relatively small number of remaining existing high-bleed pneumatic controllers

relative to a few years ago. The EPA solicits data and information on the turnover rate of

pneumatic controllers.

b. Compressors. The count of wet seal centrifugal compressors at processing plants was 343 in

both 2011 and 2017.92 The EPA expects the dry seal control option to be the most common

control strategy due to its low cost. For comparison, the number of dry seal compressors at

processing plants changed from 281 to 339 (or 21 percent), an increase of 58. At the same time

92 New or modified wet seal centrifugal compressors are subject to control requirement under

NSPS 0000 and 0000a while dry seal centrifugal compressors are not.

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the number of processing plants increased by 61. The EPA solicits data and information on the

turnover rate of wet seal centrifugal compressors.

c. Storage vessels. Natural gas production throughput at large condensate storage vessels without

controls decreased by 33 percent from 2011 to 2017. The growth is slower than the growth in

natural gas production throughput of all other types of condensate storage vessels (large tanks

with flares and vapor recovery units (VRU), and small tanks with and without flares), which was

41 percent. Oil production throughput at large storage vessels without controls increased by 18

percent from 2011 to 2017. The growth is slower than the growth in oil production throughput of

all other types of storage vessels (large tanks with flares and VRUs, and small tanks with and

without flares), which was 92 percent. In general, if many existing storage vessels were being

replaced, becoming subject to 2016 NSPS 0000a and then installing controls, we may expect

production throughput at large uncontrolled storage tanks to decline, with corresponding

increases at controlled tanks. The EPA solicits data and information on storage vessel production

throughput and the turnover rate of affected facilities.

d. Well completions. Based on the GHGI, the ratio of natural gas well completions to total

producing natural gas wells from 2011 to 2017 has decreased, from 2.4 to 1.1 percent. The ratio

of oil well completions to total producing oil wells has remained at approximately 3 percent from

2011 to 2017. If wells had a relatively short production lifetime, we would expect a high ratio of

completions to total producing wells. The 2 percent ratio indicates that a relatively small number

of wells are completed each year. Based on a preliminary analysis of the DrillingInfo database,

approximately one-third of total producing oil and gas wells in 2014 had a completion in the

prior 10 years, while two-thirds of producing oil and gas wells had no completion records for at

least 10 years. If the EPA assumes that future completion activity follows these trends, then after

2016 NSPS 0000a well site fugitive requirements have been in place for 1 O years (2016

through 2025), we might expect completions at about one-third of wells (from the perspective of

having had a completion after the effective date of the 2016 NSPS 0000a). The EPA solicits

data and information regarding the proportion of wells that have undergone a completion during

a shorter time period (e.g., less than 10 years) and that would imply that most well sites are

subject to 2016 NSPS 0000a. The EPA solicits comment on how we should characterize wells

sharing well sites (e .g., if only half of wells have had a recent completion, it would be possible

for half the wells to not be subject to 2016 NSPS 0000a, or potentially all wells could be

subject to 2016 NSPS 0000a, if wells without a recent completion always share a well site with

newer wells).

e. Compliance reports. The EPA reviewed all NSPS 0000a compliance reports that had been

submitted to the Agency through November 21, 2017, in order to identify information to use to

develop a rate at which existing facilities become new or modified. 93 Information in these

compliance reports indicates the number of various types of facilities subject to the NSPS during

the given time range. The reports included 2,991 well sites, encompassing 697 storage vessels,

five pneumatic controllers, 663 pneumatic pumps, and 2,091 instances of fugitive emissions

monitoring. 130 compressor stations were included in the reports, encompassing 148

reciprocating compressors and 94 instances of fugitive emissions monitoring. In addition, 3 8

natural gas processing plants were included, encompassing one pneumatic controller and 32

reciprocating compressors. The reports included both new and existing facilities, which we can

disaggregate in part by subtracting our previous estimates of the number of "new" facilities from

93 These reports have since been made available for public viewing at

https:llwww.foiaonline.gov/foiaonline/action/public/submissionDetails ?trackingNumber= EPAHQ-

2018-001886&type=request.

these counts which include both new and modified. A high rate of turnover (e.g. , a high rate of

facilities performing modification(s) which caused them to become subject to the 2016 NSPS

0000a) would imply that a large number of facilities should be submitting compliance reports.

Thus, the general proportions of the number of facilities in the compliance reports versus the

total population indicates how quickly facilities became subject to the NSPS during this period.

Due to various uncertainties, we are unable to develop a rate at which existing sources become

subject to the NSPS 0000a. The EPA solicits comment on ways to use this information to

predict turnover trends.

The EPA has also considered multiple factors unrelated to federal regulatory

requirements that achieve methane emissions reductions. First, market incentives exist for the oil

and natural gas industry to capture as much of its primary product as is cost effective, and that

capture reduces methane emissions. Second, firms in the oil and natural gas industry participate

in several voluntary programs to reduce emissions. Third, many of the top oil and natural gasproducing

states have developed or are developing regulations that require emissions reductions.

We believe these factors also should be considered for the universe of existing facilities and that

they point away from any need to regulate existing sources under CAA section 111 (d). The EPA

presents below background information and data on each of these factors.

2. Market Incentives

As methane is the primary constituent of natural gas, an important commodity, operators

have market incentives to reduce emissions and the loss of valuable product to the atmosphere.

Absent regulation, the incentive to maximize the capture of natural gas is the market price

obtained by the operator producing the natural gas. Assuming financially rational-acting

producers, standard economic theory suggests that oil and natural gas operators will incorporate

all cost-effective production improvements of which they are aware without government

intervention. Depending on the future trajectories of natural gas prices and the costs of natural

gas capture, these market incentives speak to the question of whether, even in the absence of

specific regulatory requirements applicable to methane emissions from existing sources,

meaningful emission decreases can nevertheless be projected to occur.

As shown in Figure 2 below, as technology, expertise, infrastructure, and regulation in

the oil and natural gas industry has improved, less natural gas has been lost to unproductive uses

such as venting and flaring. Figure 2 shows how the gross withdrawals94 of natural gas has

generally increased in the U.S. over the past 80 years while the fraction of this withdrawn natural

gas lost to venting and flaring has generally been decreasing over the same time frame.

25%

Source: U.S. Energy Information Ad rri nistration Natural Gas Data

94 U.S. EIA defines gross withdrawals of natural gas as "[f]ull well-stream volume, including allnatural

gas plant liquids and all nonhydrocarbon gases, but excluding lease condensate. Also

includes amounts delivered as royalty payments or consumed in field operations." Available at:

https:llwww.eia.gov/dnavlng! Tb!Defslng_sum sndm tbldej2. asp. Accessed October 30, 2018.

FIGURE 2. VENTED AND FLARED NATURAL GAS COMPARED TO GROSS

NATURAL GAS WITHDRAWLS VENTED IN THE U.S., 1936-201795

In 2004, the Government Accountability Office (GAO) noted that the venting and flaring data

collected by the U.S. EIA was limited in several ways, including that the data is voluntarily and

inconsistently reported.96 With that caveat in mind, while this figure does not depict a precise

relationship between natural gas production and methane emissions, the figure highlights the

point that the productive inefficiency of losing natural gas to venting and flaring has been

reduced greatly over this long period of time, likely the product of operators learning to improve

returns on costly drilling and production investments by capturing more of the product coming

out of the ground, as well as to improve the health, safety, and environmental performance of

their operations.

Regarding the relationship of methane emissions and natural gas production, while

overall natural gas gross withdrawals have increased about 50 percent from 1990 to 2016,

aggregate methane emissions from the NSPS OOOOa-relevant industry segments have stayed

relatively flat (Figure 3). This trend indicates decreasing aggregate methane emissions intensity

for these segments over this period (Figure 3).

95 U.S. EIA data on natural gas gross withdrawals available at:

https:llwww.eia.gov/ dnav/ng/ng_prod _sum_ a_ EPGO FG W mmcf_ a. htm. Accessed October 30,

2018. U.S. EIA data on vented and flared natural gas available at:

https:llwww.eia.gov/ dnav/nglng_prod _sum_ a_ EPGO VG V mmcf_ a. htm. Accessed October 30,

2018.

96 Available at: https://www.gao.gov/assets/250/243433.pdf Accessed October 30, 2018.

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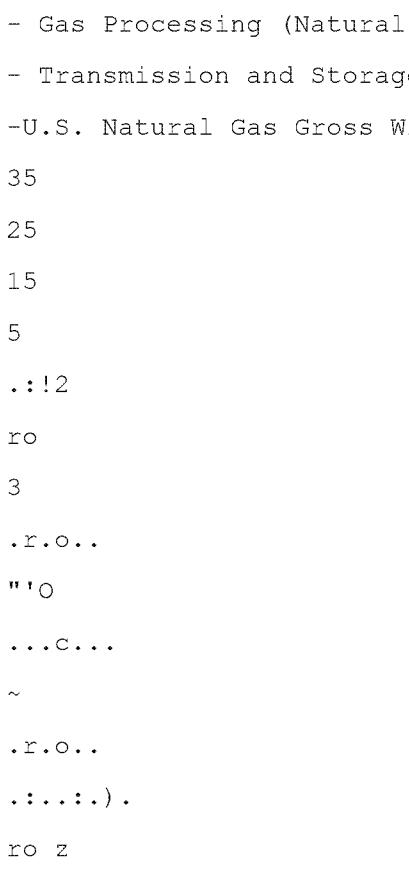

FIGURE 3. NET EMISSIONS OF METHANE EMISSIONS (FROM 2018 GHGI) and U.S. NATURAL GAS GROSS WITHDRAWLS (FROM U.S. EIA NATURAL GAS DATA), 1990 TO 2016.97

The EPA solicits comment on whether sufficient market incentives exist to offset the costs of emissions capture such that total methane emissions will trend downward under these incentives.

3. Voluntary programs

Separate from regulatory requirements, owners and operators of facilities in the oil and natural gas industry participate in voluntary programs that reduce their methane emissions.

Specifically, many owners and operators of facilities participate in the EPA partnership programs Natural Gas STAR Program and the Methane Challenge Program. Owners and operators also

97 Methane emissions from Table 3.5-2 (Petroleum Systems) and Table 3.6-1 (Natural Gas Systems) in U.S. EPA. 2018. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2016. EPA 430-R-18-003. Available at: https:/lwww.epa.gov/ghgemissions/inventory-usgreenhouse-gas-emissions-and-sinks-1990-2016. Accessed October 31, 2018.

U.S. EIA data on natural gas gross withdrawals available at: https:/lwww. eia.govldnav/ng/ng_prod _sum_ a_ EPGO FG W mmcf_ a. htm. Accessed October 31, 2018.

participate in voluntary programs unaffiliated with the EPA voluntary programs, such as the

Environmental Partnership98 and the Climate and Clean Air Coalition (CCAC) Oil & Gas

Methane Partnership. Firms might participate in voluntary environmental programs for a variety

of reasons, including attracting customers, employees, and investors who value more

environmental-responsible goods and services; finding approaches to improve efficiency and

reduce costs; and reducing pressures for potential new regulations or helping shape future

regulations. 99

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The Natural Gas ST AR Program started in 1993 and seeks to achieve methane emission

reductions through cost-effective best practices and technologies. Partner companies document

their voluntary emission reduction activities and report their accomplishments to the EPA

annually. Natural Gas STAR includes over 100 partners across the natural gas value chain and

has eliminated nearly 1.3 9 trillion cubic feet of methane emissions since 1993.

The Methane Challenge Program, started in 2016 and designed for companies that want

to adopt more ambitious actions for methane reductions, expands the Natural Gas STAR

Program through specific, ambitious commitments; transparent reporting; and company-level

recognition of commitments and progress. This program includes more than 50 companies from

all segments of the industry - production, gathering and boosting, transmission and storage, and

distribution.

98 https://theenvironmentalpartnership. org/.

99 Borek, J.C. and C. Coglianese (2009). "Voluntary Environmental Programs: Assessing Their

Effectiveness." Annual Review of Environment and Resources 34(1): 305-324.

100 Brouhle, K., C. Griffiths, and A. Wolverton. (2009). "Evaluating the role of EPA policy

levers: An examination of a voluntary program and regulatory threat in the metal-finishing

industry." Journal of Environmental Economics and Management. 57(2): 166-181.

The Environmental Partnership is comprised of various companies of different sizes and

includes commitments to replace all high-bleed pneumatic controllers with low-bleed controllers

(i .e., controllers with a bleed rate less than 6 standard cubic feet per hour) within

5 years, require

operators to be on-site or nearby when conducting liquids unloading and require initial

monitoring for fugitive emissions at all sites within 5 years, with repairs completed within 60

days of fugitive emissions detection.

The CCAC Oil and Gas Methane Partnership is a technical partnership between oil and

natural gas companies, the Environmental Defense Fund, the EPA Natural Gas STAR Program,

and the Global Methane Initiative that provides technical documents on a wide variety of

opportunities for reducing methane emissions and requires annual progress reports from its

participants. Yearly data on the progress being made by participants is available on the CCAC

website. 101

While the GHGI already accounts for these voluntary reductions, the adoption of control

technologies and emission reduction practices of participating companies reporting to the EPA' s

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programs, the EPA understands it takes time for newly launched voluntary efforts to demonstrate

reductions. The EPA also understands that not all sources participate in voluntary programs,

although participation may increase over time. The EPA solicits data and information that the

EPA can use to evaluate the aggregate present impact and potential future impact of oil and

natural gas industry participation in voluntary programs.

4. State Regulatory Programs

Several major oil and natural gas producing states have established regulations on oil and

natural gas sector emissions. These states include California (CA), Colorado (CO), Montana

101 http :1/ccacoal ition. org/ en/ content/ o ii-and-gas-me thane-partners hip-reporting.

(MT), New Mexico (NM), North Dakota (ND), Ohio (OH), Pennsylvania (PA), Texas (TX),

Utah (UT), and Wyoming (WY). 102 In 2018 within the U.S., these states contributed about 71

percent of crude oil production 103 and 69 percent of natural gas production. 104 A comparison of

sources covered by state rules, regulated pollutants, and the regulatory status of the transmission

and storage segment, is presented in Table 9.

TABLE 9. COMPARISON OF STATE OIL AND NATURAL GAS REGULATIONS

CA co MT ND NM OH PA TX UT WY

Source

Storage Vessels Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes

Reciprocating Compressors Yes Yes No No No Yes Yes No No No

Centrifugal Compressors Yes · Yes No No No Yes Yes No No No

Pneumatic Controllers Yes Yes No No No Yes Yes No Yes Yes

Pneumatic Pumps Yes Yes No No No Yes Yes No No Yes

Equipment Leaks at Natural

Yes Yes No No No No Yes Yes No No

Gas Processing Plants

Fugitive Emissions at Well

Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes

Sites

Fugitive Emissions at

Yes Yes No No No Yes Yes No No Yes

Compressor Stations

Methane Standards Yes Yes No No No No Yes No No No

Transmission and Storage

Yes Yes No No No Yes Yes No No Yes

Segment

While not all of these states cover all emission sources covered by the NSPS 0000 and

0000a, all have requirements for storage vessels and fugitive emissions at well sites, two of the

largest emission sources within the oil and natural gas industry. Select aspects of the fugitive

emissions programs for these states were evaluated as potential alternative standards to changes

to 2016 NSPS 0000a that the EPA proposed by notice dated October 15, 2018, 83 FR 52056.

102 This list does not differentiate which states are covering existing and/or new sources. We note

that states may define existing and new sources differently than the EPA.

103 https:llwww.eia.gov/state/rankings/#/series/ 46.

104 https://www.eia.gov/state/rankings/#/series/ 4 7.

The states with programs proposed to be included as alternative fugitive standards include CA,

CO, OH, and PA for both well sites and compressor stations, and TX and UT for well sites

only. 105 Alaska, Oklahoma, and West Virginia incorporate NSPS 0000 and 0000a by

reference into state rules.

Three states, including CA, CO, and PA, regulate methane emissions explicitly. 106

California requires emissions from storage vessels emitting more than 10 tpy of methane to be

routed to a vapor control system. In addition, CA does not allow for pneumatic pumps to vent

methane emissions to the atmosphere. Colorado requires certain HC destruction efficiencies for

storage vessels, as well as general requirements to design operations so that HC emissions are

minimized. Pennsylvania's General Permits 5 and 5A require various emission sources emitting

over 200 tpy of methane to control their emissions by 95 percent. These emission sources include

dehydrators, storage vessels, pigging operations, and tanker truck load-out operations. In

addition, the definition of "fugitive emission component" within these permits explicitly includes

those components that have the potential to emit methane. The permits require quarterly

instrument monitoring for compressor stations and unconventional well sites. While other states

only regulate VOC, measures that reduce VOC will also reduce methane. The EPA solicits

comment describing what other states are doing to reduce methane emissions from the oil and

natural gas industry, and, more broadly, whether there are enough consistent state requirements

in place that will meaningfully reduce emissions should the primary proposal be finalized.

Additionally, the EPA does not current have the capability to produce state-level projections of

sources in transmission and storage that are potentially affected by this action. Because of this,

105 https://www. epa.govlcontrolling-air-pollution-oil-and-natural-gas-industry/proposedimprovements-

2016-new-source.

106 Colorado includes requirements on methane emissions in the form of HC.

we are unable to perform any quantitative analysis of state programs with similar requirements.

As a result, the EPA also solicits information that will help the Agency project potentiallyaffected

facilities in the transmission and storage segment at the state level.

VIII. Impacts of This Proposed Rule

A. What are the air impacts?

The EPA estimated the change in emissions that will occur due to the implementation of

the primary and alternative options in this proposal for the analysis years of 2019 through 2025.

The EPA estimates impacts beginning in 2019 to reflect the year implementation of this

proposal. The EPA estimates impacts through 2025 to illustrate the accumulating effect of this

rule, if finalized as proposed, over a longer period. The EPA does not estimate impacts after

2025 for reasons including limited information, as explained in the RIA. The RIA estimates for

2025 include sources newly affected in 2025 as well as the accumulation of affected sources

from 2016 to 2024 that are also assumed to be in continued operation in 2025, thus, incurring

compliance costs and emission reductions in 2025.

The RIA presents results relative to two alternative baselines for this action. The first

baseline includes the March 12, 2018 Amendments final package and the October 15, 2018

proposed revisions and is referred to as the "2018 Proposed Regulatory" baseline. The second

baseline includes the March 12, 2018 Amendments final package but excludes the potential

impacts of the October 15, 2018 proposed revisions and is referred to as the "Current

Regulatory" baseline. A more detailed description of the alternative baselines is presented in

Section 1.2 of the RIA.

The EPA estimated that over the 2019 to 2025 time frame, relative to the 2018 Proposed

Regulatory baseline, the primary proposal would increase methane emissions by about 350,000

short tons, VOC emissions by about 9,700 tons, and 290 tons of HAP from facilities affected by

this review. Under the Current Regulatory baseline, the EPA estimated that over the 2019 to

2025 time frame, the primary proposal would increase methane emissions by about 370,000

short tons VOC emissions by about 10,000 tons, and 300 tons of HAP from facilities affected by

this review.

Under the alternative proposal, because the methane control options are redundant with

VOC control options, there are no expected emission impacts from rescinding the methane

requirement, relative to either of the 2018 Proposed Regulatory or the Current Regulatory

baselines.

The EPA solicits comment on the assumptions used in the memorandum titled "Draft

Control Cost and Emission Changes under the Proposed Amendments to 40 CFR Part 60,

subpart 0000a Under Executive Order 13783.

B. What are the energy impacts?

Energy impacts in this section are those energy requirements associated with the

operation of emissions control devices. Potential impacts on the national energy economy from

the rule are discussed in the economic impacts section. Under the primary proposal,

there would

be little change in the national energy demand from the operation of any of the environmental

controls proposed in this action. The alternative proposal would lead to no changes in

compliance activities and, as a result, would not produce any energy impacts. This conclusion is

independent of the choice of baseline used in the analysis supporting this action.

C. What are the compliance costs?

Under the 2018 Proposed Regulatory baseline, the EPA estimates the present value (PV)

of compliance cost savings of the primary proposal over 2019-2025, discounted back to 2016,

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will be $104 million (in 2016 dollars) using a 7 percent discount rate and $133 million using a 3

percent discount rate, not including the forgone producer revenues associated with the decrease

in the recovery of saleable natural gas. The equivalent annualized value (EA V) of these cost

savings are $18 million per year using a 7 percent discount rate and $21 million per year using a

3 percent discount rate. In this analysis, the EPA uses the 2018 Annual Energy Outlook (AEO)

projection of natural gas prices to estimate the value of the change in the recovered gas at the

wellhead. After accounting for the change in these revenues, the estimate of the PV of

compliance cost savings of the proposed review over 2019-2025, discounted back to 2016, are

estimated to be $81 million using a 7 percent discount rate, and $103 million using a 3 percent

discount rate; the corresponding estimates of the EA V of cost savings after accounting for the

forgone revenues are $14 million per year using a 7 percent discount rate, and $16 million per

year using a 3 percent discount rate.

Under the Current Regulatory baseline, the EPA estimates the present value (PV) of

compliance cost savings of the primary proposal over 2019-2025, discounted back to 2016, will

be $122 million (in 2016 dollars) using a 7 percent discount rate and $155 million using a 3

percent discount rate, not including the forgone producer revenues associated with the decrease

in the recovery of saleable natural gas. The equivalent annualized value (EA V) of these cost

savings are $21 million per year using a 7 percent discount rate and $24 million per year using a

3 percent discount rate. After accounting for the change in these revenues, the estimate of the PV

of compliance cost savings of the proposed review over 2019-2025, discounted back to 2016, are

estimated to be $97 million using a 7 percent discount rate, and $123 million using a 3 percent

discount rate; the corresponding estimates of the EA V of cost savings after accounting for the

forgone revenues are $1 7 million per year using a 7 percent discount rate, and $19 million per

year using a 3 percent discount rate.

Under the alternative proposal, because the methane control options are redundant with voe

control options, there are no expected changes in the cost or emissions from rescinding the

methane requirements relative to either baseline used in the analysis supporting this action.

Under the alternative proposal, because the methane control options are redundant with

voe control options, there are no expected changes in the cost or emissions from rescinding the

methane requirements relative to either baseline used in the analysis supporting this action.

D. What are the economic and employment impacts?

The EPA used the National Energy Modeling System (NEMS) to estimate the impacts of

the 2016 NSPS 0000a on the U.S. energy system. The NEMS is a publicly-available model of

the U.S. energy economy developed and maintained by the U.S. EIA and is used to produce the

AEO, a reference publication that provides detailed projections of the U.S. energy economy.

The EPA estimated small impacts on crude oil and natural gas markets of the 2016 NSPS

0000a rule over the 2020 to 2025 period. If finalized, the primary proposal would result in a

decrease in total compliance costs. Therefore, the EPA expects that the primary proposal would

partially reduce the impacts estimated for the 2016 NSPS 0000a in the 2016 NSPS 0000a

RIA. The alternative proposal, if finalized, would lead to no cost impacts and no changes in the

estimated impacts of the 2016 NSPS 0000a rule. This conclusion is independent of the choice

of baseline used in the analysis supporting this action.

Executive Order 13563 directs federal agencies to consider the effect ofregulations on

job creation and employment. According to the Executive Order, "our regulatory system must

protect public health, welfare, safety, and our environment while promoting economic growth,

innovation, competitiveness, and job creation. It must be based on the best available science."

(Executive Order 13563, 2011). While a standalone analysis of employment impacts is not included in a standard benefit-cost analysis, such an analysis is of concern in the current economic climate given continued interest in the employment impact of regulations such as this proposed rule.

The EPA estimated the labor impacts due to the installation, operation, and maintenance of control equipment, control activities, and labor associated with new reporting and recordkeeping requirements in the 2016 NSPS 0000a RIA. Under the primary proposal, the EPA expects there will be slight reductions in the labor required for compliance-related activities associated with the 2016 NSPS 0000a requirements relating to the rescission of requirements in the transmission and storage segment of the oil and natural gas industry. Under the alternative proposal, the EPA expects no changes in labor-related compliance requirements associated with the 2016 NSPS 0000a rule. These conclusions are independent of the choice of baseline used in the analysis supporting this action.

E. What are the benefits of the proposed standards?

The EPA expects forgone climate and health benefits due to the increase in emissions resulting from the primary proposal which would remove requirements in the transmission and storage segment. Under the alternative proposal, because the methane control options are redundant with VOC control options, there are no expected emissions impacts from rescinding the methane requirement; hence, there would be no forgone climate and health benefits resulting from the alternative option. These conclusions are independent of the choice of baseline used in the analysis supporting this action.

The EPA estimated the forgone domestic climate benefits from the increase in methane emissions associated with the action using an interim measure of the domestic social cost of methane (SC-CH4). The SC-CH4 estimates used here were developed under Executive Order 13 783 for use in regulatory analyses until an improved estimate of the impacts of climate change to the U.S. can be developed based on the best available science and economics. Executive Order

13 783 directed agencies to ensure that estimates of the social cost of GHG used in regulatory

analyses "are based on the best available science and economics" and are consistent with the

guidance contained in 0MB Circular A-4, "including with respect to the consideration of

domestic versus international impacts and the consideration of appropriate discount rates"

(Executive Order 13783, Section 5(c)). In addition, Executive Order 13783 withdrew the

technical support documents (TSDs) and the August 2016 Addendum to these TSDs describing

the global social cost of GHG estimates developed under the prior Administration as no longer

representative of government policy. The withdrawn TSDs and Addendum were developed by an

interagency working group that included the EPA and other executive branch entities and were

used in the 2016 NSPS 0000a RIA.

Under the primary proposal, the EPA expects that the forgone VOC emission reductions

will degrade air quality and are likely to adversely affect health and welfare associated with

exposure to ozone, PM2 s, and HAP, but we are unable to quantify these effects at this time. This

omission should not imply that these forgone benefits do not exist, and to the extent that EPA

were to quantify these ozone and PM impacts, it would estimate the number and value of

avoided premature deaths and illnesses using an approach detailed in the Particulate Matter

NAAQS and Ozone NAAQS Regulatory Impact Analyses (U.S. EPA, 2012; U.S. EPA, 2015).

When quantifying the incidence and economic value of the human health impacts of air

quality changes, the Agency often relies upon reduced-form techniques; these are often reported

as "benefit-per-ton" values that relate air pollution impacts to changes in air pollutant precursor

emissions (U.S. EPA, 2018). A small but growing literature characterizes the air quality and

health impacts from the oil and natural gas industry, but does not yet supply the information

needed to derive a VOC benefit per ton value suitable for a regulatory analysis (Fann, et al.,

2018; Litovitz, et al., 2013; Loomis, et al., 2017). 107 Moreover, the Agency is currently

comparing various reduced-form techniques, including benefit per ton approaches that quantify

air quality benefits. Over the last year and a half, the EPA systematically compared the changes

in benefits, and concentrations where available, from its benefit-per-ton technique and

other

reduced-form techniques to the changes in benefits and concentration derived from full-form

photochemical model representation of a few different specific emissions scenarios. 108 The

Agency's goal was to better understand the suitability of alternative reduced-form air quality

modeling techniques for estimating the health impacts of criteria pollutant emissions changes in

the EPA's benefit-cost analysis, including the extent to which reduced form models may over- or

under-estimate benefits (compared to full-scale modeling) under different scenarios and air

107 Fann, N., et al. (2018). "Assessing Human Health PM2.s and Ozone Impacts from U.S. Oil

and Natural Gas Sector Emissions in 2025." Environmental Science & Technology 52(15): 8095-

8103.

Litovitz, A., et al. (2013). "Estimation ofregional air-quality damages from Marcellus Shale

natural gas extraction in Pennsylvania." Environmental Research Letters 8(1): 014017.

Loomis, J. and M. Haefele (2017). "Quantifying Market and Non-market Benefits and Costs of

Hydraulic Fracturing in the United States: A Summary of the Literature." Ecological Economics

138: 160-167.

108 This analysis compared the benefits estimated using full-form photochemical air quality

modeling simulations (CMAQ and CAMx) against four reduced-form tools, including: InMAP;

AP2/3; EASIUR and the EPA's benefit-per-ton.

quality concentrations. The scenario-specific emission inputs developed for this project are

currently available online. 109 The study design and methodology will be thoroughly described in

the final report summarizing the results of the project, which is planned to be completed by the

end of 2019.

Relative to the 2018 Proposed Regulatory baseline, the PV of the estimated forgone

domestic climate benefits over 2019-2025, discounted back to 2016, is $13 million using a 7

percent discount rate and $49 million using a 3 percent discount rate. The EA V of these

estimated forgone climate benefits is $2.2 million per year using 7 percent discount rate and $7.7

million per year using a 3 percent discount rate. Under the Current Regulatory baseline, the PV

of the estimated forgone domestic climate benefits over 2019-2025, discounted back to 2016,

will be $13 million using a 7 percent discount rate and $52 million using a 3 percent discount

rate. The EA V of these estimated forgone climate benefits is $2.3 million per year using 7

percent discount rate and $8.1 million per year using a 3 percent discount rate. These values

represent only a partial accounting of domestic climate impacts from methane emissions and do

not account for health effects of ozone exposure from the increase in methane emissions.

IX. Statutory and Executive Order Reviews

Additional information about these statutes and Executive Orders can be found at

https ://www.epa.gov/laws-regulations/laws-and-executive-order s.

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563:

Improving Regulation and Regulatory Review

109 The scenario-specific emission inputs developed for this project are currently available online

at: https://github.com/epa-kpc/RFMEVAL. Upon completion and publication of the final report,

the final report and all associated documentation will be online and available at this URL.

This action is a significant regulatory action that was submitted to 0MB for review

because it raises novel legal or policy issues. Any changes made in response to 0MB

recommendations have been documented in the docket. In addition, the EPA prepared an RIA of

the potential costs associated with the primary and alternative proposals in this action. The RIA

available in the docket describes in detail the empirical basis for the EPA's assumptions and

characterizes the various sources of uncertainties affecting the estimates below.

The RIA presents results relative to two alternative baselines for this action. The first

baseline includes the March 12, 2018 Amendments final package and the October 15, 2018

proposed revisions and is referred to as the "2018 Proposed Regulatory" baseline. The second

baseline includes the March 2018 Amendments final package but excludes the potential impacts

of the October 15, 2018 proposed revisions and is referred to as the "Current Regulatory"

baseline. A more detailed description of the alternative baselines is presented in Section 1.2.2 of

the RIA.

Table 10 shows the present value and equivalent annualized value results of the cost

and

benefits analysis for the primary proposal for 2019 through 2025 relative to the 2018 Proposed

Regulatory baseline discounted back to 2016 using a discount rate of 7 percent. The table also

shows the total increase in emissions from 2019 through 2025 from the primary proposal relative

to the 2018 Proposed Regulatory baseline. When discussing net benefits, we modify the relevant

terminology to be more consistent with traditional net benefits analysis. In the following table,

we refer to the cost savings as presented in section 2 of the RIA, and in section VII.C above, as

the "benefits" of this proposed action and the forgone benefits as presented in section 3 of the

RIA, and in section VIII.E above, as the "costs" of this proposed action. Total cost savings are

cost savings less the forgone value of product recovery. The net benefits are the benefits (total

cost savings) minus the costs (forgone domestic climate benefits).

Table 10 shows the present value and equivalent annualized value results of the cost and

benefits analysis for the primary proposal for 2019 through 2025 relative to the 2018 Proposed

Regulatory baseline discounted back to 2016 using a discount rate of 7 percent. The table also

shows the total increase in emissions from 2019 through 2025 from the primary proposal relative

to the 2018 Proposed Regulatory baseline. When discussing net benefits, we modify the relevant

terminology to be more consistent with traditional net benefits analysis. In the following table,

we refer to the cost savings as presented in Section 2 of the RIA, and in section VII.C above, as

the "benefits" of this proposed action and the forgone benefits as presented in Section 3 of the

RIA, and in section VIII.E above, as the "costs" of this proposed action. Total cost savings are

cost savings less the forgone value of product recovery. The net benefits are the benefits (total

cost savings) minus the costs (forgone domestic climate benefits).

TABLE 10. SUMMARY OF THE PRESENT VALUE AND EQUIVALENT

ANNUALIZED VALUE OF THE MONETIZED FORGONE BENEFITS, COST

SA VIN GS, AND NET BENEFITS OF THE PRIMARY PROPOSAL FROM 2019

THROUGH 2025 RELATIVE TO THE 2018 PROPOSED REGULATORY BASELINE

(MILLIONS OF 2016$)

Present Value Equivalent Annualized Value

Benefits (Total Cost

Savings) $81 $14

Cost Savings

$104 $18

Forgone Value of

Product Recovery $23 $4.0

Costs (Forgone

Domestic Climate $13 $2.2

Benefits)

Net Benefits

$69 $12

Non-monetized climate impacts from increases in methane emissions

Non-monetized Health effects of PM2.s and ozone exposure from an increase of 9,700

Forgone Benefits tons of voe from 2019 through 2025

Health effects of HAP exposure from an increase of290 tons of HAP

from 2019 through 2025

Health effects of ozone exposure from an increase of 350,000 short

tons of methane from 2019 through 2025

Visibility impairment

Vegetation effects

Estimates may not sum due to independent rounding.

Table 11 shows the present value and equivalent annualized value results of the cost and

benefits analysis for the primary proposal for 2019 through 2025 relative to the Current

Regulatory baseline, discounted back to 2016 using a discount rate of 7 percent. The table also

shows the total increase in emissions from 2019 through 2025 from the primary proposal relative

to the Current Regulatory baseline.

TABLE 11. SUMMARY OF THE PRESENT VALUE AND EQUIVALENT

ANNUALIZED VALUE OF THE MONETIZED FORGONE BENEFITS, COST

SA VIN GS, AND NET BENEFITS OF THE PRIMARY PROPOSAL FROM 2019

THROUGH 2025 REAL TIVE TO THE CURRENT REGULATORY BASELINE

(MILLIONS OF 2016$)

Present Value Equivalent Annualized Value

Benefits (Total Cost

Savings) $97 $17

Cost Savings

$122 $21

Forgone Value of

Product Recovery $25 $4.4

Costs (Forgone

Domestic Climate $13 $2.3

Benefits)

Net Benefits

$83 $14

Non-monetized climate impacts from increases in methane emissions

Non-monetized Health effects of PM2.s and ozone exposure from an increase of

Forgone Benefits 10,000 tons ofVOC from 2019 through 2025

Health effects of HAP exposure from an increase of 300 tons of HAP

from 2019 through 2025

Health effects of ozone exposure from an increase of 370,000 short

tons of methane from 2019 through 2025

Visibility impairment

Vegetation effects

Estimates may not sum due to independent rounding.

Under the alternative proposal, because the methane control options are redundant with

VOC control options, there are no expected cost or emissions impacts from rescinding the

methane requirement. As a result, Table 12 depicts this "no-change" in impacts result relative to

the 2018 Proposed Regulatory baseline. The no-change in impacts result also applies relative to

the Current Regulatory baseline, as shown in Table 13.

TABLE 12. SUMMARY OF THE PRESENT VALUE AND EQUIVALENT

ANNUALIZED VALUE OF THE MONETIZED FORGONE BENEFITS, COST

SA VIN GS, AND NET BENEFITS OF THE ALTERNATIVE PROPOSAL FROM 2019

THROUGH 2025 RELATIVE TO THE 2018 PROPOSED REGULATORY BASELINE

(MILLIONS OF 2016$)

Present Value Equivalent Annualized Value

Benefits (Total $0 Cost Savings) $0

Costs (Forgone

Domestic Climate $0 $0

Benefits)

Net Benefits $0 $0

Non-monetized

No change

Forgone Benefits

Estimates may not sum due to independent rounding.

TABLE 13. SUMMARY OF THE PRESENT VALUE AND EQUIVALENT

ANNUALIZED VALUE OF THE MONETIZED FORGONE BENEFITS, COST

SA VIN GS, AND NET BENEFITS OF THE ALTERNATIVE PROPOSAL FROM 2019

THROUGH 2025 RELATIVE TO THE CURRENT REGULATORY BASELINE

(MILLIONS OF 2016$)

Present Value Equivalent Annualized Value

Benefits (Total $0 $0

Cost Savings)

Costs (Forgone

Domestic Climate $0 $0

Benefits)

Net Benefits $0 $0

Non-monetized

No change

Forgone Benefits

Estimates may not sum due to independent rounding.

B. Executive Order 13 771: Reducing Regulations and Controlling Regulatory Costs

This action is expected to be an Executive Order 13 771 deregulatory action. Details on

the estimated cost savings of this proposed rule can be found in the EPA's analysis of the

potential costs and benefits associated with this action.

C. Paperwork Reduction Act (PRA)

The information collection requirements in this rule have been submitted for approval to

the Office of Management and Budget (0MB) under the Paperwork Reduction Act, 44 U.S.C.

3501 et seq. The Information Collection Request (ICR) document prepared by the EPA has been

assigned the EPA ICR number 2523.04 and 0MB Control Number 2060-0721. The information

collection requirements are not enforceable until 0MB approves them.

A summary of the information collection activities previously submitted to the 0MB for

the final action titled "Standards of Performance for Crude Oil and Natural Gas Facilities for

Construction, Modification, or Reconstruction" (2016 NSPS 0000a) under the PRA, and

assigned 0MB Control Number 2060-0721 , can be found at 81 FR 35890. You can find a copy

of the information collection request (ICR) in the 2016 NSPS 0000a docket (EPA-HQ-OAR-

2010-0505-7626). The EPA subsequently proposed reconsideration (October 15, 2018, 83 FR 52056.) to revise the information collection activities of2016 NSPS 0000a (EPA ICR number 2523.02). You can find a copy of the revised ICR (EPA ICR number 2523.02) in the 2018 NSPS 0000a docket (EPA-HQ-OAR-2017-0483). In this rule, the EPA is proposing to further revise the October 15, 2018, NSPS 0000a reconsideration proposal ICR based on those proposed amendments as a result of the EPA's review under Executive Order 13783 (EPA ICR number 2523.04). These proposed changes (2019 NSPS 0000a EO 13783 Review Proposal) would reduce the burden on the regulated industry associated with reporting and recordkeeping requirements of the rescinded requirements.

Burden associated with this rule (2019 NSPS 0000a EO 13 783 Review Proposal):

Respondents/affected entities: Oil and natural gas operators and owners.

Respondent 's obligation to respond: Mandatory.

Estimated number of respondents: 3,648.

Frequency of response: Varies depending on affected facility' 10

Total estimated annual burden: 230,285 hours. Burden is defined at 5 CFR 1320.3(b).

Total estimated annual cost: $14,177,438 (2016$).

This represents a burden reduction of 2 percent compared to the burden estimated for the 2016 NSPS 0000a. This represents a burden reduction of 16 percent compared to the 2018 NSPS 0000a Reconsideration Proposal amendments. Submit your comments on the Agency's need for this information, the accuracy of the provided revised burden estimates, and any suggested methods for minimizing respondent burden to the EPA using the docket identified at the beginning of this rule. You may also send your !CR-related comments to OMB's Office of Information and Regulatory Affairs via email to OIRA_submissions@omb.eop.gov, Attention: Desk Officer for the EPA. Since 0MB is required to make a decision concerning the ICR between 30 and 60 days after receipt, 0MB must receive comments no later than [INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The EPA will respond to any I CR-related comments in the final rule.

D. Regulatory Flexibility Act (RF A)

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RF A. In making this determination, the impact of concern is any significant adverse economic impact on small entities. An Agency may certify that a rule will not have a significant economic impact on a substantial number of small entities

if the rule

relieves regulatory burden, has no net burden, or otherwise has a positive economic effect on the

small entities subject to the rule. This is a deregulatory action, and the burden on all entities

110 The specific frequency for each information collection activity within this request is shown in

Tables 1 a-1 d of the Supporting Statement in the public docket.

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affected by this proposed rule, including small entities, is the same or reduced compared to the

2016 NSPS 0000a. See the discussion in section VIII of this preamble and the RIA for details.

The EPA has, therefore, concluded that this action will not increase regulatory burden for all

directly regulated small entities.

E. Unfunded Mandates Reform Act (UMRA)

This action does not contain any unfunded mandate as described in UMRA, 2 U.S.C.

1531-1538, and does not significantly or uniquely affect small governments. The action imposes

no enforceable duty on any state, local, or tribal governments or the private sector.

F. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct

effects on the states, on the relationship between the national government and the states, or on

the distribution of power and responsibilities among the various levels of government.

G. Executive Order 131 75: Consultation and Coordination with Indian Tribal Governments

This action does not have tribal implications, as specified in Executive Order 13175. It

will not have substantial direct effects on tribal governments, on the relationship between the

federal government and Indian tribes, or on the distribution of power and responsibilities

between the federal government and Indian tribes, as specified in Executive Order 13175. Thus,

Executive Order 13175 does not apply to this action.

H Executive Order 13045: Protection of Children from Environmental Health Risks and Safety

Risks

This action is not subject to Executive Order 13045 because it is not economically

significant as defined in Executive Order 12866. The 2016 NSPS 0000a, as discussed in the

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RIA, 111 was anticipated to reduce emissions of methane, VOC, and HAP, and some ofthe

benefits of reducing these pollutants would have accrued to children. The primary proposal is

expected to decrease the impact of the emissions reductions estimated from the 2016 NSPS

0000a on these benefits, as discussed in Chapter 1 of the RIA. Under the alternative proposal,

because the methane control options are redundant with VOC control options, there are no

changes in the level of environmental protection produced by the 2016 NSPS 0000a emissions

impacts from rescinding the methane requirement.

The proposed action does not affect the level of public health and environmental

protection already being provided by existing NAAQS and other mechanisms in the CAA. This

proposed action does not affect applicable local, state, or federal permitting or air quality

management programs that will continue to address areas with degraded air quality and maintain

the air quality in areas meeting current standards. Areas that need to reduce criteria air pollution

to meet the NAAQS will still need to rely on control strategies to reduce emissions. The EPA

does not believe the decrease in emission reductions projected under the primary proposal of this

action will have a disproportionate adverse effect on children's health.

I Executive Order 13211: Actions Concerning Regulations that Significantly Affect Energy

Supply, Distribution, or Use

This action is not a "significant energy action" because it is not likely to have a

significant adverse effect on the supply, distribution, or use of energy. The basis for this

determination can be found in the 2016 NSPS 0000a (81 FR 35894).

J National Technology Transfer and Advancement Act (NTT AA)

This rulemaking does not involve technical standards.

K. Executive Order 12898: Federal Actions to Address Environmental Justice in Minority

Populations and Low-Income Populations

The EPA believes that this proposed action is unlikely to have disproportionately high

and adverse human health or environmental effects on minority populations, low-income

populations, and/or indigenous peoples, as specified in Executive Order 12898 (59 FR 7629,

February 16, 1994). The 2016 NSPS 0000a was anticipated to reduce emissions of methane,

VOC, and HAP, and some of the benefits of reducing these pollutants would have accrued to

minority populations, low-income populations, and/or indigenous peoples. The primary proposal

is expected to decrease the impact of the emission reductions estimated from the 2016 NSPS

0000a on these benefits. These communities may experience forgone benefits as a result of this

action, as discussed in Chapter 1 of the RIA. Under the alternative proposal, because the methane

control options are redundant with VOC control options, there are no changes in the level of

environmental protection produced by the 2016 NSPS 0000a emissions impacts from

rescinding the methane requirement.

The proposed action does not affect the level of public health and environmental

protection already being provided by existing NAAQS and other mechanisms in the CAA. This

proposed action does not affect applicable local, state, or federal permitting or air quality

management programs that will continue to address areas with degraded air quality and maintain

the air quality in areas meeting current standards. Areas that need to reduce criteria air pollution

to meet the NAAQS will still need to rely on control strategies to reduce emissions.

The EPA believes that this proposed action is unlikely to have disproportionately high

and adverse human health or environmental effects on minority populations, low-income

populations, and/or indigenous peoples. The EPA notes that the potential impacts of the primary

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proposal are not expected to be experienced uniformly, and the distribution of avoided

compliance costs associated with this action depends on the degree to w}:lich costs would have

been passed through to consumers.

Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified

Sources Review

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List of Subjects in 40 CFR Part 60

Environmental protection, Administrative practice and procedure, Air pollution control,

Reporting and recordkeeping requirements .

. AUG 2 8 2019

Andrew R. Wheeler,

Administrator.

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For the reasons set out in the preamble, EPA proposes to amend 40 CFR part 60 as

follows:

PART 60-ST AND ARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

1. The authority citation for part 60 continues to read as follows:

Authority: 42 U.S.C. 4701 , et seq.

Subpart 0000- Standards of Performance for Crude Oil and Natural Gas Production,

Transmission and Distribution for which Construction, Modification or Reconstruction

Commenced After August 23, 2011, and on or before September 18, 2015

2. Revise the heading of subpart 0000 to read as follows: Standards of Performance for Crude

Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction

Commenced After August 23 , 2011, and on or before September 18, 2015

3. Section 60.5365 is amended by:

a. Revising paragraph (e).

The revisions read as follows:

§60.5365 Am I subject to this subpart?

* * * * *

(e) Each storage vessel affected facility, which is a single storage vessel located between the

wellhead and the point of custody transfer to the natural gas transmission and storage segment,

and has the potential for VOC emissions equal to or greater than 6 tpy as determined according

to this section by October 15, 2013 for Group 1 storage vessels and by April 15, 2014, or 30 days

after startup (whichever is later) for Group 2 storage vessels, except as provided in paragraphs

(e)(1) through (4) of this section. The potential for VOC emissions must be calculated using a

generally accepted model or calculation methodology, based on the maximum average daily

throughput determined for a 30-day period of production prior to the applicable emission

determination deadline specified in this section. The determination may take into account

requirements under a legally and practically enforceable limit in an operating permit or other

requirement established under a Federal, State, local or tribal authority.

* * * * *

4. Section 60.5420 is amended by:

a. Revising paragraph (c)(5)(iv).

The revisions read as follows:

§60.5420 What are my notification, reporting, and recordkeeping requirements?

* * * * *

(iv) For storage vessels that are skid-mounted or permanently attached to something that is

mobile (such as trucks, railcars, barges or ships), records indicating the number of consecutive

days that the vessel is located a between the wellhead and the point of custody transfer to the

natural gas transmission and storage segment. If a storage vessel is removed from a site and,

within 30 days, is either returned to or replaced by another storage vessel at the site to serve the

same or similar function, then the entire period since the original storage vessel was first located

at the site, including the days when the storage vessel was removed, will be added to the count

towards the number of consecutive days.

* * * * *

Subpart OOOOa-Standards of Performance for Crude Oil and Natural Gas Facilities for

which Construction, Modification or Reconstruction Commenced After September 18,

2015

5. Section 60.5360a is amended by:

a. Revising paragraph (a).

b. Removing and reserving paragraph (b).

The revisions read as follows:

§60.5360a What is the purpose of this subpart?

(a) This subpart establishes emission standards and compliance schedules for the control of

volatile organic compounds (VOC) and sulfur dioxide (S02) emissions from affected facilities in

the crude oil and natural gas source category that commence construction, modification or

reconstruction after September 18, 2015. The effective date of the rule is August 2, 2016.

(b) [Remove and Reserve]

6. Section 60.5365a is amended by:

a. Revising paragraphs (b) through (d).

b. Revising the introductory text of paragraph (e).

c. Revising paragraph U).

The revisions read as follows:

§60.5365a Am I subject to this subpart?

* * * * *

(b) Each centrifugal compressor affected facility, which is a single centrifugal compressor using

wet seals that is located between the wellhead and the point of custody transfer to the natural gas

transmission and storage segment. A centrifugal compressor located at a well site, or

an adjacent

well site and servicing more than one well site, is not an affected facility under this subpart.

(c) Each reciprocating compressor affected facility, which is a single reciprocating compressor

that is located between the wellhead and the point of custody transfer to the natural gas

transmission and storage segment. A reciprocating compressor located at a well site, or an

adjacent well site and servicing more than one well site, is not an affected facility under this

subpart.

(d) (1) For the oil production segment (between the wellhead and the point of custody transfer to

an oil pipeline), each pneumatic controller affected facility, which is a single continuous bleed

natural gas-driven pneumatic controller operating at a natural gas bleed rate greater than 6 scfh.

(2) For the natural gas production segment (between the wellhead and the point of custody

transfer to the natural gas transmission and storage segment and not including natural gas

processing plants), each pneumatic controller affected facility, which is a single continuous bleed

natural gas-driven pneumatic controller operating at a natural gas bleed rate greater than 6 scfh.

(3) For natural gas processing plants, each pneumatic controller affected facility, which is a

single continuous bleed natural gas-driven pneumatic controller.

(e) Each storage vessel affected facility, which is a single storage vessel that is located between

the wellhead and the point of custody transfer to the natural gas transmission and storage

segment, and has the potential for voe emissions equal to or greater than 6 tpy as determined

according to this section. The potential for voe emissions must be calculated using a generally

accepted model or calculation methodology, based on the maximum average daily throughput, as

defined in §60.5430a, determined for a 30-day period of production prior to the applicable

emission determination deadline specified in this subsection. The determination may take into

account requirements under a legally and practically enforceable limit in an operating permit or

other requirement established under a Federal, state, local or tribal authority.

* * * * *

(j) The collection of fugitive emissions components at a compressor station as defined in

§60.5430a, that is located between the wellhead and the point of custody transfer to the natural

gas transmission and storage segment, is an affected facility. For purposes of §60.5397a, a

"modification" to a compressor station occurs when:

(1) An additional compressor is installed at a compressor station; or

(2) One or more compressors at a compressor station is replaced by one or more compressors of

greater total horsepower than the compressor(s) being replaced. When one or more compressors

is replaced by one or more compressors of an equal or smaller total horsepower than the

compressor(s) being replaced, installation of the replacement compressor(s) does not trigger a

modification of the compressor station for purposes of §60.5397a.

* * * * *

7. Section 60.5375a is amended by:

a. Revising the title of the section and the introductory text.

The revisions read as follows:

§60.5375a What VOC standards apply to well affected facilities?

If you are the owner or operator of a well affected facility as described in §60.5365a(a) that also

meets the criteria for a well affected facility in §60.5365(a) of subpart 0000 of this part, you

must reduce voe emissions by complying with paragraphs (a) through (g) of this section. If you

own or operate a well affected facility as described in §60.5365a(a) that does not meet the

criteria for a well affected facility in §60.5365(a) of subpart 0000 of this part, you must reduce

voe emissions by complying with paragraphs (f)(3), (f)(4) or (g) for each well completion

operation with hydraulic fracturing prior to November 30, 2016, and you must comply with

paragraphs (a) through (g) of this section for each well completion operation with hydraulic

fracturing on or after November 30, 2016.

* * * * *

8. Section 60.5380a is amended by:

a. Revising the title of the section and the introductory text.

b. Revising paragraph (a).

The revisions read as follows:

§60.5380a What voe standards apply to centrifugal compressor affected facilities?

You must comply with the VOC standards in paragraphs (a) through (d) of this section for each

centrifugal compressor affected facility.

(a)(l) You must reduce VOC emissions from each centrifugal compressor wet seal fluid

degassing system by 9 5. 0 percent.

* * * * *

9. Section 60.5385a is amended by:

a. Revising the title of the section and the introductory text.

b. Revising paragraph (a)(3).

The revisions read as follows:

§60.5385a What voe standards apply to reciprocating compressor affected facilities?

You must reduce VOC emissions by complying with the standards in paragraphs (a) through (d)

of this section for each reciprocating compressor affected facility.

* * * * *

(3) Collect the VOC emissions from the rod packing using a rod packing emissions collection

system that operates under negative pressure and route the rod packing emissions to a process

through a closed vent system that meets the requirements of §60.541 la(a) and (d).

* * * * *

10. Section 60.5390a is amended by:

a. Revising the title of the section and the introductory text.

The revisions read as follows:

§60.5390a What voe standards apply to pneumatic controller affected facilities?

For each pneumatic controller affected facility you must comply with the voe standards, based

on natural gas as a surrogate for voe, in either paragraph (b)(l) or (c)(l) of this section, as

applicable. Pneumatic controllers meeting the conditions in paragraph (a) of this section are

exempt from this requirement.

* * * * *

11 . Section 60.5393a is amended by:

a. Revising the title of the section and the introductory text.

The revisions read as follows:

§60.5393a What voe standards apply to pneumatic pump affected facilities?

For each pneumatic pump affected facility you must comply with the voe standards, based on

natural gas as a surrogate for voe, in either paragraph (a) or (b) of this section, as applicable, on

or after November 30, 2016.

* * * * *

12. Section 60.5397a is amended by:

a. Revising the title of the section and the introductory text.

The revisions read as follows:

§60.5397a What fugitive emissions voe standards apply to the affected facility which is

the collection of fugitive emissions components at a well site and the affected facility which

is the collection of fugitive emissions components at a compressor station?

For each affected facility under §60.5365a(i) and U), you must reduce voe emissions by

complying with the requirements of paragraphs (a) through U) of this section. These

requirements are independent of the closed vent system and cover requirements in §60.541 la.

* * * * *

13. Section 60.5398a is amended by:

a. Revising the title of the section.

b. Revising paragraph (a)

c. Revising paragraph (d)(l)(xii).

The revisions read as follows:

§60.5398a What are the alternative means of emission limitations for VOC from well

completions, reciprocating compressors, the collection of fugitive emissions components at

a well site and the collection of fugitive emissions components at a compressor station?

(a) If, in the Administrator's judgment, an alternative means of emission limitation will achieve a

reduction in voe emissions at least equivalent to the reduction in voe emissions achieved

under §60.5375a, §60.5385a, and §60.5397a, the Administrator will publish, in the FEDERAL

REGISTER, a notice permitting the use of that alternative means for the purpose of compliance

with §60.5375a, §60.5385a, and §60.5397a. The notice may condition permission on

requirements related to the operation and maintenance of the alternative means.

* * * * *

(xii) Operation and maintenance procedures and other provisions necessary to ensure reduction

in voe emissions at least equivalent to the reduction in voe emissions achieved under

§60.5397a.

* * * * *

14. Section 60.5399a is amended by:

a. Revising paragraph (c).

The revisions read as follows:

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§60.5399a What alternative fugitive emissions standards apply to the affected facility which

is the collection of fugitive emissions components at a well site and the affected facility

which is the collection of fugitive emissions components at a compressor station:

Equivalency with state, local, and tribal programs?

* * * * *

(c) After notice and opportunity for public comment, the Administrator will determine whether

the requested alternative fugitive emissions standard will achieve at least equivalent emission

reduction(s) in VOC emissions as the reduction(s) achieved under the applicable requirement(s)

for which an alternative is being requested, and will publish the determination in the Federal

Register.

* * * * *

15. Section 60.5400a is amended by:

a. Revising the title of the section.

b. Revising paragraph (c).

The revisions read as follows:

§60.5400a What equipment leak VOC standards apply to affected facilities at an onshore

natural gas processing plant?

* * * * *

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(c) You may apply to the Administrator for permission to use an alternative means of emission

limitation that achieves a reduction in emissions of voe at least equivalent to that achieved by

the controls required in this subpart according to the requirements of §60.5402a.

* * * * *

16. Section 60.5401a is amended by:

a. Revising the title of the section.

The revisions read as follows:

§60.5401a What are the exceptions to the equipment leak voe standards for affected

facilities at onshore natural gas processing plants?

* * * * *

17. Section 60.5402a is amended by:

a. Revising the title of the section.

b. Revising paragraph (a).

c. Revising paragraph (d)(2).

The revisions read as follows:

§60.5402a What are the alternative means of emission limitations for voe equipment leaks

from onshore natural gas processing plants?

(a) If, in the Administrator's judgment, an alternative means of emission limitation will achieve a

reduction in voe emissions at least equivalent to the reduction in voe emissions achieved

under any design, equipment, work practice or operational standard, the Administrator will

publish, in the FEDERAL REGISTER, a notice permitting the use of that alternative means for the

purpose of compliance with that standard. The notice may condition permission on requirements

related to the operation and maintenance of the alternative means.

* * * * *

(2) The application must include operation, maintenance and other provisions necessary to assure

reduction in voe emissions at least equivalent to the reduction in voe emissions achieved

under the design, equipment, work practice or operational standard in paragraph (a) of this

section by including the information specified in paragraphs (d)(l)(i) through (x) of this section.

* * * * *

18. Section 60.541 Oa is amended by:

a. Revising paragraph (a).

b. Revising paragraph (b)(l).

b. Revising paragraph (d).

c. Revising paragraph (f).

The revisions read as follows:

§60.5410a How do I demonstrate initial compliance with the standards for my well,

centrifugal compressor, reciprocating compressor, pneumatic controller, pneumatic pump,

storage vessel, collection of fugitive emissions components at a well site, collection of

fugitive emissions components at a compressor station, and equipment leaks and

sweetening unit affected facilities at onshore natural gas processing plants?

* * * * *

(a) To achieve initial compliance with the voe standards for each well completion operation

conducted at your well affected facility you must comply with paragraphs (a)(l) through (4) of

this section.

* * * * *

(b)(l) To achieve initial compliance with standards for your centrifugal compressor affected

facility you must reduce voe emissions from each centrifugal compressor wet seal fluid

degassing system by 95.0 percent or greater as required by §60.5380a(a) and as demonstrated by

the requirements of §60.5413a.

* * * * *

(d) To achieve initial compliance with voe emission standards for your pneumatic controller

affected facility you must comply with the requirements specified in paragraphs (d)(l) through

(6) of this section, as applicable.

* * * * *

(f) For affected facilities at onshore natural gas processing plants, initial compliance with the

voe standards is demonstrated if you are in compliance with the requirements of §60.5400a.

* * * * *

19. Section 60. 5412a is amended by:

a. Revising paragraph (a)(l)(i).

b. Revising paragraph (a)(2).

The revisions read as follows:

§ 60.5412a What additional requirements must I meet for determining initial compliance

with control devices used to comply with the emission standards for my centrifugal

compressor, and storage vessel affected facilities?

* * * * *

(i) You must reduce the mass content ofVOe in the gases vented to the device by 95.0 percent

by weight or greater as determined in accordance with the requirements of §60.5413a(b), with

the exceptions noted in §60.5413a(a).

* * * * *

(2) Each vapor recovery device (e.g., carbon adsorption system or condenser) or other nondestructive

control device must be designed and operated to reduce the mass content of VOC in

the gases vented to the device by 95.0 percent by weight or greater as determined in accordance

with the requirements of §60.5413a(b). As an alternative to the performance testing requirements, you may demonstrate initial compliance by conducting a design analysis for vapor recovery devices according to the requirements of §60.5413a(c).

* * * * *

20. Section 60.5413a is amended by:

a. Revising paragraph (d)(l l)(iii).

The revisions read as follows:

§ 60.5413a What are the performance testing procedures for control devices used to demonstrate compliance at my centrifugal compressor and storage vessel affected facilities?

* * * * *

(iii) A manufacturer must demonstrate a destruction efficiency of at least 95 percent for THC, as propane. A control device model that demonstrates a destruction efficiency of 95 percent for THC, as propane, will meet the control requirement for 95 percent destruction of VOC (if applicable) required under this subpart.

* * * * *

21. Section 60.5415a is amended by:

a. Revising paragraph (b)(l).

b. Revising paragraph (f).

The revisions read as follows:

§ 60.5415a How do I demonstrate continuous compliance with the standards for my well, centrifugal compressor, reciprocating compressor, pneumatic controller, pneumatic pump, storage vessel, collection of fugitive emissions components at a well site, and collection of fugitive emissions components at a compressor station affected facilities, and affected facilities at onshore natural gas processing plants?

* * * * *

(1) You must reduce voe emissions from the wet seal fluid degassing system by 95.0 percent or greater.

* * * * *

(f) For affected facilities at onshore natural gas processing plants, continuous compliance with voe requirements is demonstrated if you are in compliance with the requirements of §60.5400a.

* * * * *

22. Section 60.5420a is amended by:

a. Revising paragraph (c)(5)(iv).

The revisions read as follows:

§60.5420a What are my notification, reporting, and recordkeeping requirements?

* * * * *

(iv) For storage vessels that are skid-mounted or permanently attached to something that is

mobile (such as trucks, railcars, barges or ships), records indicating the number of consecutive

days that the vessel is located at a site in the oil and natural gas production segment or natural

gas processing segment. If a storage vessel is removed from a site and, within 30 days, is either

returned to the site or replaced by another storage vessel at the site to serve the same or similar

function, then the entire period since the original storage vessel was first located at the site,

including the days when the storage vessel was removed, will be added to the count towards the

number of consecutive days.

* * * * *

23. Section 60.5421a is amended by:

a. Revising the title of the section.

The revisions read as follows:

§60.5421a What are my additional recordkeeping requirements for my affected facility

subject to voe requirements for onshore natural gas processing plants?

* * * * *

24. Section 60.5422a is amended by:

a. Revising the title of the section.

The revisions read as follows:

§60.5422a What are my additional reporting requirements for my affected facility subject

to voe requirements for onshore natural gas processing plants?

* * * * *

25. Section 60.5430a is amended by:

a. Revising the definitions of Compressor station, Crude oil and natural gas source category,

Equipment, First attempt at repair, and Fugitive emissions component.

The revisions read as follows:

* * * * *

Compressor station means any permanent combination of one or more compressors that move

natural gas at increased pressure through gathering pipelines. This includes, but is not limited to,

gathering and boosting stations. The combination of one or more compressors located at a well

site, or located at an onshore natural gas processing plant, is not a compressor station for

purposes of §60.5397a.

* * * * *

Crude oil and natural gas source category means:

(1) Crude oil production, which includes the well and extends to the point of custody transfer to

the crude oil transmission pipeline or any other forms of transportation; and

(2) Natural gas production and processing, which includes the well and extends to, but does not

include, the point of custody transfer to the natural gas transmission and storage segment.

* * * * *

Equipment, as used in the standards and requirements in this subpart relative to the equipment

leaks of VOC from onshore natural gas processing plants, means each pump, pressure relief

device, open-ended valve or line, valve, and flange or other connector that is in VOC service or

in wet gas service, and any device or system required by those same standards and requirements

in this subpart.

* * * * *

First attempt at repair means, for the purposes of fugitive emissions components, an action taken

for the purpose of stopping or reducing fugitive emissions of VOC to the atmosphere. First

attempts at repair include, but are not limited to, the following practices where practicable and

appropriate: tightening bonnet bolts; replacing bonnet bolts; tightening packing gland nuts; or

injecting lubricant into lubricated packing.

* * * * *

Fugitive emissions component means any component that has the potential to emit fugitive

emissions of VOC at a well site or compressor station, including valves, connectors, pressure

relief devices, open-ended lines, flanges, covers and closed vent systems not subject to

§§60.5411 or 60.541 la, thief hatches or other openings on a controlled storage vessel not subject

to §§60.5395 or 60.5395a, compressors, instruments, and meters. Devices that vent as

part of

normal operations, such as natural gas-driven pneumatic controllers or natural gas-driven pumps,

are not fugitive emissions components, insofar as the natural gas discharged from the device's

vent is not considered a fugitive emission. Emissions originating from other than the device's

vent, such as the thief hatch on a controlled storage vessel, would be considered fugitive

em1ss1ons.

* * * * *